The Productive Unconscious: Architecture, Experimental Psychology and the Techniques of Subjectivity in Soviet Russia, 1919-1935

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THE PRODUCTIVE UNCONSCIOUS: ARCHITECTURE, EXPERIMENTAL PSYCHOLOGY AND TECHNIQUES OF SUBJECTIVITY IN SOVIET RUSSIA, 1919-1935

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ABSTRACT

This dissertation examines how Soviet architecture employed the achievements of experimental psychology in order to transform human subjectivity during the Interwar period, particularly in the years defined by the First Five-Year Plan of Economic Development (1928-1932). In this program of forced modernization, every resource—including human muscular, intellectual, and emotional energy—had to be channeled into the construction of an industrialized economy. Inspired by studies of unconscious, physiological responses to visual stimuli and by an accompanying turn to psychologism in the philosophy of science, Soviet architects, artists, and bureaucrats reinterpreted architectural work as the design of subjective perception, the purpose of which was to produce an energetic subject who would actively and efficiently participate in the implementation of the Plan.

The dissertation examines three episodes in which Soviet architecture and design aspired to control the unconscious in order produce a new energetic subject. The first part explores the theoretical research on unconscious perception conducted by Nikolai Ladovskii's Rationalist architectural movement, which, following the philosophy of empiriocriticism, strove to economize the energy of perception. The second illustrates how the theory of the unconscious was tested and developed experimentally, assessing the program of wallpainting developed by architect Moisei Ginzburg, Bauhaus designer Hinnerk Scheper, and others as an artistic and architectural discipline that aspired to produce working energy. The third and final episode exemplifies how unconscious perception was put to practical use in the Moscow Central Park of Culture and Leisure under Betti Glan, where creative energy was evoked by material objects and the spatial environment.

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TABLE OF CONTENTS

Introduction

Defining the Problem: Research Question, Methodology, and Historiography 12

Discursive Framework: Energy, Life, the Unconscious 28

Soviet Economic and Cultural Context 38

Chapter One. Theory: the Psychoanalytical Method of Nikolai Ladovskii and the Philosophy of Empiriocriticism (1919-1927) 58

Empiriocriticism 64

Psychological Aesthetics and the Economy of Mental Energy 80

Architectural Expression 98

The Architecture of Space 110

Rationalist Psychotechnics 128

Conclusion 157

Chapter Two. Experiment: Wallpainting and the Standardization of the Subject (1929-1932) 160

Color Harmonies 166

Space and Movement 182

Standardization 196

The Economy of Working Energy 224

The *Narkmofin* Residential Block and Unconscious Perception 234

The Architecture of Attention 246

Conclusion 254

Chapter Three. Praxis: Moscow Central Park of Culture and Leisure and Objects-Organizers (1928-1935) 256

Collectivism 263

Organized Masses 278

Architectures of Organization 303

Organizing Individuality 327

Conclusion 353

Conclusion 357

Illustration Credits 371

Bibliography 377

Archival Sources 377

Printed Sources 378

INTRODUCTION

Defining the Problem: Research Question, Methodology, and Historiography

When we refrain from using air conditioning or minimize the heating in the room, or when we admire architects' skillful use of sunshades and other techniques of saving this scarce and expensive product, electricity, we (even though hardly anything seems more postmodernist than a concern for sustainability) unwittingly revive one of modernism's intrinsic imperatives—that of the economy of energy. The only difference is that today, we are worried about the Earth's nonrecoverable organic resources, whereas a hundred years ago another resource seemed equally vital and easily extinguishable—the energy of the human organism. Viewed as a unit of work force by Marxism, as a cluster of muscle activity by physiology, as a center of sexual energy by psychoanalysis, or as a materialization of *élan vital* by Bergsonism (this list could be easily continued), a human being turned into a repository of unique and fragile resource whose balance was essential for the survival of both the person and the society. Moreover, in the Interwar Soviet Union, psychological energy, transferable into productive labor, was seen as one of the resources for a construction of an industrial economy. To manage this state property prudently and with a scientific precision, Soviet theoreticians proposed relying on contemporary psychological research, most importantly, on discoveries of experimental psychology, which studied not reason, but automatic, physiological (in other words, unconscious) reactions. It was

believed that, regulating subjects' activity, the unconscious spared the employment of their intellect, saving psychological energy for productive work. This dissertation argues that Soviet Interwar architecture also aspired to contribute to economic construction—and through this, to reclaim its disciplinary status and importance—by optically affecting the unconscious in order to manipulate psychological energy under its various interpretations, as perceptive, creative, productive, muscular, intellectual, or emotional.

The title of this dissertation, "The Productive Unconscious," refers to this role of the unconscious as an economizer of the subject's psychological energy. In the 1930s, Walter Benjamin introduced the term "the optical unconscious" pointing to new, previously unnoticeable sides of reality—from horse movement to mass rallies—discovered by such optical instruments as photograph and movie cameras.[1] The optical, for Benjamin, was not a predicate of the unconscious itself, but rather characterized the medium through which it was discovered. Benjamin placed optics not within the unconscious, but within consciousness—attention and reason—while the unconscious operated, for him, through habit and the tactile. In the perception of architecture, the optical and the tactile came together, the fomer working according to the principles of the latter. In his canonical essay "The Work of Art in the Age of Mechanical Reproduction" (1936) Benjamin wrote:

> As regards architecture, habit determines to a large extent even optical reception. The latter, too, occurs much less through rapt attention than by noticing the object in incidental fashion. This mode of appropriation, developed with reference to architecture, in certain circumstances acquires canonical value. For the tasks which face the human apparatus of perception at the turning points of history cannot be solved by optical

[1] Walter Benjamin, "Little History of Photography" (1931), *Selected Writings*, (Cambridge, MA: Belknap Press, 1996) 507-530; Walter Benjamin, "The Work of Art in the Age of Mechanical Reproduction" (1936), *Illuminations* (London: Pimlico, 1999) 211-244. See also Rosalind E. Krauss, *The Optical Unconscious* (Cambridge, MA: MIT Press, 1993) 178-179.

> means, that is, by contemplation, alone. They are mastered gradually by habit, under the guidance of tactile appropriation.[2]

Perceived automatically, architectural images entered the domain of the unconscious, from which they unnoticeably affected the person's attitudes and behaviours. Below I examine how Soviet architects, in the years immediately preceding the writing of Benjamin's essay, discovered this potential of their discipline. Striving to put these unconsciously perceived images to use, they wanted to integrate architecture into the economic life of the state, most importantly, into an ambitious program of forced industrialization launched by Stalin in 1928. The unconscious became productive: now, rather than idly residing at the bottom of human psyche, it worked, purposefully and fruitfully contributing to reaching society's common goal.

Scholarship over the last thirty years has demonstrated the pervasiveness of this energetic psychological model of subjectivity within modernist culture, presenting it as the result of attempts to reconceive the human and social sciences in terms developed by "hard" science. Historians have demonstrated that the emergence of psychology was largely inspired by a desire to get away from a speculative, "metaphysical" approach to human mind and take physics as a model of scientific research.[3] Anson Rabinbach's comprehensive study (1990) elucidated how the individual metamorphosed into a "human motor" due to these developments in science and experimental psychology,[4] while Friedrich Kittler argued, several years earlier, that this

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[2] Walter Benjamin, "The Work of Art in the Age of Mechanical Reproduction" (1936), *Illuminations*. Ed. Hannah Arendt (New York: Schocken Books, 1969) 217-252 (240).

[3] See, for instance, Lorraine J. Daston, "The Theory of Will versus the Sciences of Mind," William R. Woodward and Mitchell G. Ash, eds. *The Problematic Science: Psychology in Nineteenth-Century Thought*, (New York: Praeger, 1982) 88-115.

[4] Anson Rabinbach, *The Human Motor: Energy, Fatigue, and the Origins of Modernity*, (New York: Basic Books, 1990).

transformation resulted from a "paradigm shift" in Western discourse of subjectivity from maternal education ("the discourse of 1800") to psychophysics ("the discourse of 1900"). According to Kittler, "Instead of the classical question of what people would be capable of if they were adequately and affectionately 'cultivated,' one asks what people have always been capable of when autonomic functions are singly and thoroughly tested."[5] In its claim to scientific objectivity, psychophysics (the name the new science received after Gustav Fechner's seminal *Elemente der Psychophysik*, 1860) studied the relationship between psychological stimuli and sensations and the perceptions that they provoked. A related science, psychophysiology, which was especially popular in Russia with its strong tradition of physiological research, investigated the relationship between stimuli and physiological bodily responses such as skin conductance and heart rate.[6]

Following these and other studies of the role played by experimental psychology in nineteenth-century thought, present-day historians have began exploring ties between art and architecture on the one hand, and the development of psychology on the other. Since aesthetics

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[5] Friedrich A. Kittler, *Discourse Networks 1800/1900*, (Stanford, CA: Stanford University Press, 1990) 214.

[6] Emerging in Russia in the first half of the nineteenth century under the influence of German-language research, physiology explored processes happening in human and animal bodies under the influence of various stimuli (for instance, in the work of Aleksei M. Filomafitskii [1807-1849], the founder of Moscow physiological school). In the second half of the century, Russian psychology was dominated by the school of Ivan Mikhailovich Sechenov (1829-1905), who explained higher nervous activity of the humans by physiological processes; Sechenov's elimination of the notion of soul made his work a target of official censorship and a magnet for radically-minded intelligentsia. His most famous work, *Reflexes of the Brain* [*Refleksy golovnogo mozga*] (1863) was initially written for a liberal journal *Sovremennik* [*The Contemporary*], commissioned by the journal's editor, revolutionary-democratic poet Nikolai Nekrasov, as an overview of contemporary scientific discussion; the initial titles of the work (subsequently banned by censorship) were "An attempt to reduce the origins of psychic events to physiological foundations" and "An attempt to introduce physiological foundations into psychic processes." The next generation of Russia physiology was dominated by Ivan Petrovich Pavlov (1849-1936), a Noble prize winner famous for his work on conditional reflexes (for which "Pavlov's dog" served the usual object of research), who until his death remained among Soviet scientific elite.

and the nascent discipline of art history frequently provided mediating ground between the two fields, they, too, have become the object of historians' avid interest: the work of Harry Francis Mallgrave, Jonathan Crary, and Mark Jarzombek laid the foundation for this approach in the 1990s, followed by the subsequent publications of Juliet Koss, Spyros Papapetros, Zeynep Çelik Alexander, and other authors, particularly architectural historians.[7] At the same time, the subjective perception of the visual environment became a topic of research of those scholars who, not assessing the history of psychophysiological aesthetics directly, approached its effects from a variety of perspectives: the history of cultural imagination (Anthony Vidler, Giuliana Bruno, Edward Dimendberg; this approach proved to be especially important for film and literature studies), the history of artists' and architects' interest in sensual perception and its significance for the development of modernist art theory (investigated primarily by art historians, such as Michael Fried, Caroline Jones, Gordon Hughes), and a Deleuzian inquiry into the bodily perception of art (James Elkins).[8]

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[7] A notable precedent to this tradition is the work of Jose Arguelles (José Argüelles, *Charles Henry and the Formation of a Psychophysical Aesthetic*, [Chicago: University of Chicago Press, 1972]); it did not, however, attract much attention at the time it was published, and was only later rediscovered by scholars. See also Harry Francis Mallgrave, and Eleftherios Ikonomou, eds., *Empathy, Form, and Space: Problems in German Aesthetics, 1873-1893*, (Santa Monica, CA: Getty Center for the History of Art and the Humanities, 1994); Jonathan Crary, *Suspensions of Perception: Attention, Spectacle, and Modern Culture*, (Cambridge, MA: MIT Press, 1999); Mark Jarzombek, *The Psychologizing of Modernity: Art, Architecture, and History*, (Cambridge, UK: Cambridge University Press, 2000); Juliet Koss, *Modernism After Wagner*, (Minneapolis: University of Minnesota Press, 2010); Spyros Papapetros, *On the Animation of the Inorganic: Art, Architecture, and the Extension of Life*, (Chicago: University of Chicago Press, 2012); Zeynep Çelik Alexander, "Kinaesthetic impulses: aesthetic experience, bodily knowledge, and pedagogical practices in Germany, 1871-1918," Ph.D. dissertation, Massachusetts Institute of Technology, 2007.

[8] Anthony Vidler, *Warped Space: Art, Architecture, and Anxiety in Modern Culture*, (Cambridge, MA: MIT Press, 2000); Giuliana Bruno, *Atlas of Emotion: Journeys in Art, Architecture, and Film*, (London: Verso, 2002); Edward Dimendberg, *Film Noir and the Spaces of Modernity*, (Cambridge, MA: Harvard University Press, 2004); Michael Fried, *Menzel's Realism: Art and Embodiment in Nineteenth-Century Berlin* (New Haven: Yale University Press, 2002); Caroline A. Jones, *Eyesight Alone: Clement Greenberg's Modernism and the Bureaucratization of the Senses* (Chicago: University of Chicago Press, 2005); Gordon Hughes, "Coming into Sight: Seeing Robert Delaunay's

An acknowledgement of psychophysiology's role as a model of thinking about the human within the modernist tradition led to a reconsideration of the connection between modernism and Enlightenment and to a consequent critique of Western rationality. It became obvious that the modern European individual was conceived as predominantly irrational and driven by impulses and desires, the true nature of which was hidden from him in his naïve belief that he was guided by independent and conscious decisions.[9] As Kittler argued, since the middle of the nineteenth century, questions about meaning and content as products of subjective mind became increasingly irrelevant, contributing to the mechanization of thinking about the human. This denial of rational, individual subjectivity led ultimately to the emergence of artistic forms that critiqued rationality itself, such as Dadaism, sound poetry and abstraction. Recently, prominent social psychologists Daniel Wegner and John Bargh, among others, argued for the illusory character of conscious will, which Wegner described as "a marvelous trick of the mind, one that yields useful intuitions about our authorship—but it is not the foundation for an explanatory system that stands outside the paths of deterministic causation."[10]

The work of social psychologists has informed cultural critics that precisely because of the illusion of rationality, to which our society clings, the modern Western individual is prone to political manipulation by those whose messages, apart from their often meaningless verbal

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Structure of Vision," *October*, Vol. 102 (Autumn, 2002): 87-100; James Elkins, *Pictures of the Body: Pain and Metamorphosis*, (Stanford, CA: Stanford University Press, 1999).

[9] On the nineteenth-century history of this argument see Daston, "The Theory of Will versus the Science of Mind."

[10] Daniel M. Wegner, "The mind's best trick: how we experience conscious will," *TRENDS in Cognitive Sciences,* Vol.7 No.2 (February 2003): 65-69 (68). See also Daniel M. Wegner, *The Illusion of Conscious Will*, (Cambridge University Press, 2002); J. A. Bargh, P. M. Gollwitzer, A. Y. Lee-Chai, K. Barndollar, R. Troetschel, "The automated will: Nonconscious activation and pursuit of behavioral goals," *Journal of Personality and Social Psychology,* 81 (2001): 1014-1027; R. Hassin, J. Uleman, J. Bargh, eds., *The New Unconscious*, (New York and Oxford: Oxford University Press, 2005).

construction, convey a powerful affective charge. Thus, Brian Massumi, one of the most distinguished proponents of contemporary "affect theory" uses an analysis of affective perception as a tool of political criticism, arguing that postmodern politics is affective, and is based on intensities and omissions rather than on logical reasoning. [11] He bases his approach on the work of psychologist Silvan Tomkins, an heir to the tradition of psychophysics, who in the 1960s developed a classification of basic (elementary) human affects.[12] At the same time, Massumi, writing from the standpoint of poststructuralist critique (influenced above all by the writings of Gilles Deleuze), draws a distinction between affect and emotion. Unlike emotion, which possesses a stable semantics, affect, according to Massumi, is vague, unstable and contradictory (for instance, happiness might coexist with sadness). Massumi compares affect with a bifurcation point in chaos theory—"the turning point at which a physical system paradoxically embodies multiple and normally mutually exclusive potentials, only one of which is 'selected.'"[13] Likewise, the "energy" that the protagonists of this dissertation aspired to save or produce was vaguely defined and experienced as an intensity rather than as an unambiguously identifiable emotion. Usually remaining entirely within the domain of the unconscious, it could

[11] Brian Massumi, "The Autonomy of Affect," *Cultural Critique*, No. 31, "The Politics of Systems and Environments," Part II (Autumn,1995): 83-109, and "Potential Politics and the Primacy of Preemption," *Theory & Event*, Volume 10, Issue 2 (2007). Interestingly, Massumi's (and affect theory in general) intellectual pedigree can be traced back to the same thinkers whose work shaped projects and discussions assessed in this dissertation, first of all, the empriocriticism of Ernst Mach: Gilles Deleuze, Massumi's major source of inspiration, rediscovered the philosophy of Alfred North Whitehead (1861-1947) who, as a mathematician and a philosopher of science, directly inherited to the tradition of anti-metaphysical thinking initiated by Mach.

[12] The six affects initially distinguished by Tomkins were interest-excitement, enjoyment-joy, surprise-startle, distress-anguish, anger-rage, and fear-terror. Later, he added three more: shame-humiliation, "dissmell" and disgust. The building-blocks of emotional world, affects, for Tomkins, were elementary and discrete, whereas emotions, combined of affects, were complex and more ambiguous.

[13] Massumi, "The Autonomy of Affect," 93.

immediately translate itself into actions whose true motives remained hidden from the acting person.

The binary opposition between cognition and affect that Massumi constructs develops a well established distinction between the conscious mind and the unconscious; linguistically inexpressible (lacking a signifier), affect resides in the domain of the unconscious. Just as psychoanalysis attempted to purify the notion of the unconscious from its earlier spiritual and metaphysical connotations, affect theory aspires to purge the unconscious from an association with subjective erotic experience, returning it to its objective scientific foundations. The critics of Massumi's work (most importantly, Ruth Leys) have drawn attention to the problematic character of the opposition between cognition and affect constructed by the scholar by pointing out that the two frequently interpenetrate and influence each other.[14] Likewise, this dissertation refuses to recognize affect as fundamentally different from rational thinking. Rather, my approach is to historicize their relationship, demonstrating how early modernism conceived of cognition as rooted in affect and aspired to make thinking more efficient by stimulating its affective component. As early as 1869 Eduard von Hartmann, perhaps the first theoretician of the unconscious, underscored that it was in no way opposed to cognition. Rather, the unconscious was its other, broader, form: "For if we can only be cognisant of the actual contents of consciousness—thus can have no knowledge of aught out of consciousness—by what right do we assert that that, whose existence is revealed in consciousness, could not also exist outside our consciousness?"[15] The content of that which is "outside of our consciousness" could be

[14] Ruth Leys, "The Turn to Affect: A Critique," *Critical Inquiry*, Vol. 37, No. 3 (Spring 2011): 434-472.

[15] Eduard von Hartmann, *Philosophy of the Unconscious*, transl. by William Chatterton Coupland, in 3 vols. Vol.1, (London: K. Paul, Trench, Trübner & Co, 1893) 2-3.

understood as un-cognitive, or intuitive. It was with this view that the celebrated scientist Henri Poincaré and Russian "philosopher of invention" Petr Engelmeyer each described conscious and unconscious mental work as two necessary stages of the same creative process.[16]

By insisting on the inseparability of conscious and unconscious manipulation, this dissertation also defies Massumi's distinction (which is also accepted by Leys) between ideology, materialized in logical content-based forms, and affect, which is taken to be pre-conscious and therefore non-ideological. Rather than simply triggering political or other behaviors whose reasons remain concealed from the actor (for instance, the laughter of a girl whose cortex was mechanically stimulated during a brain surgery, a case discussed in a recent psychological study by William Connolly; or Freud's example of meaningless actions, such as opening an umbrella, suggested during a hypnosis session) affect creates psychological triggers for behavior, the motives of which, although not entirely verbalizable, often require no invented, external explanation and are thus not totally alien to the subject (unlike the example given by Connolly, in which the girl every time explained her laughter with different reasons: "the horse is funny" or "you guys are just so funny ... standing around"; or the case of Freud's patient, who, when asked a similar question retorted that "As it was raining I thought you might like the umbrella").[17] In other words, even though affect might not create an idea, it can illustrate, actualize, support, or highlight ideas that have already been incepted earlier. Affect could

[16] Henri Poincaré, *Science and Method*, transl. by Francis Maitland, (London: T. Nelson and Sons, 1914) 46-63; Petr Engelmeier [Engelmeyer], *Teoria tvorchestva* [*The theory of creativity*], (Sankt-Peterburg: Obrazovanie, 1910).

[17] William Connolly, "Brain Waves, Transcendental Fields, and Techniques of Thought," *Radical Philosophy*, No. 94 (1999). Leys uses Connolly's example to argue with him and to support her argument about the inseparability of affect and cognition; ideology and affect, nevertheless, remain separated for her.

produce mental associations and direct thought in certain directions, slow or intensify thought, or even replace some of its stages.

Downplaying the difference between ideology and affect, I will instead follow the definition of ideology provided in Louis Althusser's canonical "Ideology and Ideological State Apparatuses" (1969), which refers to late works of Marx, who defined ideology as a system of ideas and representations, and in which "disappeared: the term *ideas*. Survive: the terms *subject*, *consciousness*, *belief*, *actions*. Appear: the terms *practices*, *rituals*, *ideological apparatus*."[18] Althusser here defended two principal points: first, that "Ideology represents the imaginary relationship of individuals to their real conditions of existence"; and second that "Ideology has a material existence." If the first thesis defined ideology as a product of imagination, the second asserted its rootedness in ritual. "If he believes in God, he goes to Church to attend Mass, kneels, prays, confesses, does penance (once it was material in the ordinary sense of the term) and naturally repents and so on" explained the materiality of ideology Althusser, rephrasing the maxim attributed to Blaise Pascal: "Kneel down, move your lips in prayer, and you will believe."[19] The proximity of the materiality of Althusser's ritual practices and the innate materialism of the psychological notion of the unconscious (in its psychophysiological, psychophysical, and even psychoanalytical interpretations) prompted Althusser to compare the two as equally intrinsic to human mental and social organization:

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[18] Louis Althusser, "Ideology and Ideological State Apparatuses (Notes towards an Investigation)" (1970), translated by Ben Brewster. *Lenin and Philosophy and Other Essays* (Monthly Review Press, 1971). Web. 3.4.2014. <https://www.marxists.org/reference/archive/althusser/1970/ideology.htm>.

[19] Thus, for Althusser, "where only a single subject (such and such an individual) is concerned, the existence of the ideas of his belief is material in that his ideas are his material actions inserted into material practices governed by material rituals which are themselves defined by the material ideological apparatus from which derive the ideas of that subject." Althusser, "Ideology and Ideological State Apparatuses."

> To give a theoretical reference-point here, I might say that, to return to our example of the dream, in its Freudian conception this time, our proposition: ideology has no history, can and must (and in a way which has absolutely nothing arbitrary about it, but, quite the reverse, is theoretically necessary, for there is an organic link between the two propositions) be related directly to Freud's proposition that the *unconscious is eternal*, i.e. that it has no history.
>
> If eternal means, not transcendent to all (temporal) history, but omnipresent, trans-historical and therefore immutable in form throughout the extent of history, I shall adopt Freud's expression word for word, and write *ideology is eternal*, exactly like the unconscious. And I add that I find this comparison theoretically justified by the fact that the eternity of the unconscious is not unrelated to the eternity of ideology in general.

Even if, as Althusser believed, ideology and the unconscious has no history, ideological manipulation with the unconscious certainly does; and this dissertation is an attempt to write this very history. Holding affect and ideology together allows the dissertation to offer a new perspective on the history of Soviet art and architecture, bypassing an otherwise vexing problem: the relationship between the arts and politics. Indeed the fact that from the mid 1920s onward, many artists and architects remained at the forefront of artistic life, "selling" their talent to the regime, prompted some Cold-War and post-Cold-War historians to search for personal motives and other possible explanations of this "bewildering" fact.[20] Such a viewpoint asserts the perversity of Soviet art and architectural life at the time, assuming that its "natural" course was violently disrupted by state power. But as with any *a priori* position, this view is itself ideological[21]: it transforms an historian into a critic, journalist or detective who focuses on

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[20] See, in particular: Benjamin H. D. Buchloh, "From Faktura to Factography," *October*, Vol. 30 (1984): 82-119; Dmitrii Khmel'nitskii, *Arkhitektura Stalina : psikhologiiā i stil'* ["Stalin's Architecture: Psychology and Style"] (Moskva: Progress-Traditsia, 2007), translated into German as *Die Architektur Stalins* (Stuttgart: Ibidem-Verlag, 2007); Danilo Udovički-Selb, *The Evolution of Soviet Architectural Culture in the First Decade of Stalin's 'perestroika,'* (Trondheim: [s.n.], 2009); Richard Anderson, "The Future of History: The Cultural Politics of Soviet Architecture, 1928-41." Ph. D. dissertation, Columbia University, 2010.

[21] Silvan Tomkins defined ideology as "any organized set of ideas about which human beings are at once most articulate and most passionate, and for which there is no evidence and about which they are least certain. The foundations of mathematics, the philosophy of science, metaphysics, theology, epistemology, the theory of value,

particulars at the expense of the general—the commonalities between the modernist culture in the USSR and other countries. An alternative to this approach has been developed, predominantly in the USSR and European countries, since the late 1960s: concentrating on historical facts and the formal qualities of Soviet art and architecture.[22] Following a third approach, which is both criticial and non-ideological, this dissertation presents the development of Soviet architectural theory as a logical consequence of modernist European thought.[23] It locates the origins of Soviet modernist architecture within the development of European modernism, and presents the Soviet case as the unconscious of Western modern and postmodern architectural culture—a troubling, problematic unconscious that had been carefully repressed from the histories of art and architecture.

To complicate the received Cold-War notion of Soviet totalitarianism, I suggest a reassessment of Soviet modernist notions of subjectivity. Here again Althusser's essay might be

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ethics, aesthetics, jurisprudence, government, theory of education and finally, theories about child rearing, more recently called socialization—these have all evoked the most coherent and passionate controversy." Silvan Tomkins, "Ideology and Affect," *Exploring Affect. The selected writings of Silvan S. Tomkins.* Ed. E. Virginia Demos (Cambridge and Paris: Cambridge University Press and Editions de la Maison des Sciences de l'Homme, 1977) 109-167 (111).

[22] For best examples of this approach, see, Anatole Senkevitch, "Trends in Soviet Architectural Thought, 1917-1932: The Growth and Decline of the Constructionist and Rationalist Movements." Ph. D. dissertation, Cornel University, 1974; Selim O. Khan-Magomedov, *Pioneers of Soviet Architecture: The Search for New Solutions in the 1920s and 1930s* (New York: Rizzoli, 1987) and other publications of Selim O. Khan-Magomedov; Jean-Louis Cohen, *Le Corbusier and the Mystique of the USSR: Theories and Projects for Moscow, 1928-1936* (Princeton, N.J.: Princeton University Press, 1992); Catherine Cooke, *Russian Avant-Garde: Theories of Art, Architecture, and the City* (London: Academy Editions, 1995).

[23] In this respect, this dissertation inherits to the structuralist approach developed within the framework of late-Soviet *kul'turologia* (cultural studies), which explored the development of "culture" as an independent and active reality. See, in particular, Vladimir Papernyi, *Architecture in the Age of Stalin: Culture Two* (New York: Cambridge University Press, 2002), first published in Russian in 1984; and Boris Grois, *The Total Art of Stalinism: Avant-garde, Aesthetic Dictatorship, and Beyond* (Princeton, N.J.: Princeton University Press, 1992), first published in German in 1988.

of help. The theorist pointed to the linguistic confusion between two meanings of the word "subject": "(1) a free subjectivity, a centre of initiatives, author of and responsible for its actions; (2) a subjected being, who submits to a higher authority, and is therefore stripped of all freedom except that of freely accepting his submission." Moreover, Althusser supplemented these two types of "subjects" with the Subject (with the capital *S*)—the subject par excellence, as "Unique, Absolute, *Other Subject*"; the submission of a subject to the Subject, according to him, happened freely and voluntarily.[24] As will be argued below, the Subject of Soviet ideology was not a tyrant or the state—rather it was the collective Soviet people or even the entirety of humanity. Only gradually in the 1930s did Stalin assume the role of the representative of the Subject, a role resembling that of a king who proclaimed himself the earthly representative of God. Thus, in Althusser's terms, in the late-1920s Soviet modernist culture required that one had to sacrifice a part of his or her free subjectivity (imperfect, deficient subject 1) and submit themselves (that is, become subject 2) to the higher authority of the collective (the Subject) in order to receive a fuller, better and truer subjectivity (an ideal subject 1). This argument is an enthymeme—a syllogism with a missing but assumed premise: the latter states that by subjecting one's imperfect self to the collective sum total of all selves, a person acquires a new agency as a part of the collective. In subjecting herself to the collective, however, a person does not lose her individuality; on the contrary, she compensates for her imperfection by enriching herself with the individualities of the others. Like a blood transfusion, a medical procedure whose potential for

[24] As a result, "the individual *is interpellated as a (free) subject in order that he shall submit freely to the commandments of the Subject, i.e. in order that he shall (freely) accept his subjection*, i.e. in order that he shall make the gestures and actions of his subjection 'all by himself'. *There are no subjects except by and for their subjection.*" Althusser, "Ideology and Ideological State Apparatuses."

prolonging life was intensely explored in the 1920s Russia,[25] participation in the collective cured a person by infusing her with life and diversity of others. The dialectics of these transformations will be assessed in all detail in the body of the dissertation; yet it is important to note here that it was not a loathing of personality, but rather a belief in will and agency that motivated Soviet architects' interest in psychophysiology and their desire to improve the person as a "human motor."

Although Soviet architecture did not renounce human subjectivity, while construing the ideal subject, it attempted to incorporate this subject into the totalizing system of social, economic, political, and cultural reality, thus responding to one of modernism's intrinsic imperatives—that of total organization. Few attempts succeeded in to demonstrating the interconnectedness of modernism and totalitarianism. Representing a still-dominant approach among political theorists, a recent publication by Richard Shorten, although aspiring to show "exactly how totalitarianism *is* modern," asserted an absolute boundary between a totalitarian modernism of Stalinism and Nazism and a liberal modernism of Western democracies.[26] Unlike political scientists, cultural and intellectual historians have paid less attention to geopolitical divides, which were, indeed, easily trespassed by theories and ideas. Boris Groys's seminal *The Total Art of Stalinism* (originally published in German in 1988) exposed totalitarian ambitions innate to Russian "avant-garde," accusing it of preparing ground for Stalin's violent dictatorship. A different approach—the one that warned about its totalitarian potential but believed in the

[25] It was, above all, promoted and developed by Aleksandr Bogdanov, one of the co-founders of the philosophy of collectivism, which, as will be demonstrated in the dissertation, during the 1920s, had a particular impact upon Soviet architectural theory.

[26] Shorten, Richard, *Modernism and Totalitarianism: Rethinking the Intellectual Sources of Nazism and Stalinism, 1945 to the Present* (Basingstoke, Hampshire: Palgrave Macmillan, 2012) 1.

possibility for a "democratic" avant-garde—was offered by Michael Hays, who in the 1990s characterized the dialectics of freedom and totalitarianism within modernism as "posthumanism." Emerging as a response by architects to the fragmentation of the individual during the era of industrial capitalism, posthumanism, according to Hays, eradicated from architecture the holistic conception of an authorial and centralized humanist subjectivity that was still pertinent to early modernism and replaced it with a subjectivity that was fragmented, decentered, and serialized. "...Seriality, the renunciation of narrative time, the disprivileging of the purely visual, and the thematization of incompletness and uncertainty are aesthetic corollaries of the disenfranchisement of autonomous individualism," Hays argued, echoing Kittler's observations.[27] Consequently, in art and architecture posthumanism led to a negation, sublation, or masking of such formalist strategies of canonical avant-garde as self-referentiality, autonomy and the grounding of every art in a particular domain of experience. Not unlike the postmodernist turn to affect detected by Massumi, posthumanism led to a denigration of reason and rationality and, as a result, to a dissolution of the notion of an autonomous Kantian individual.

Although influenced by Frankfurt school Marxism, Hays differentiated between progressive and totalitarian posthumanism (exemplified by the work of Hannes Meyer and Ludwig Hilberseimer respectively), this notion possesses a potential for ethically neutral usage: addressing the essence of modernism in general, it avoids national boundaries and ignores political affiliations. When applied to Soviet ideology, the notion of posthumanism allows us to avoid viewing it through the lens of totalitarianism (i. e. necessarily predicated on the perverse will of a leader) and invites us to interpret it as a part of modernist culture. I will thus treat the

[27] Michael Hays, *Modernism and the Posthumanist Subject: the Architecture of Hannes Meyer and Ludwig Hilberseimer* (Cambridge, MA: MIT Press, 1992) 5.

type of subjectivity constructed in Soviet Russia —in particular, during the late 1920s-early 1930s—as posthumanist. In doing so, however, I will also depart from Hays's poststructuralist approach that conceived the subject as textual sign, formed by ideological structures and implied rather than described in a text.[28] Rather, reflecting Massumi's program of departing from the linguistic model and "finding a semiotics willing to engage with continuity," I propose to turn to the subject's bodily reactions to architecture. Moreover, I want to render the posthumanist subject concrete by turning to the actual discussions of subjectivity and examining the ways in which this subjectivity was analyzed, fabricated, and manipulated in an historically specific situation.[29]

To navigate within this historic specificity, my dissertation will follow the approach of its own protagonists: it attempts to become conscious of what usually remains beyond the grasp of consciousness. The peripheral and the seemingly meaningless, thus, emerge as the locus of unfakeable truth. As Carlo Ginzburg has shown, psychoanalysis's interest in the unconscious, Giovanni Morelli's method of art historical attribution through peripheral details, and even Sherlock Holmes's "deductive" detective method, represent a new scientific paradigm that emerged towards the end of the nineteenth century, which located "the real" in what remained beyond the control of the subject's rationality.[30] My dissertation will thus discuss forms and genres that did not attract a lot of attention at their time because of their ostensible insignificance; moreover, situated on (or, rather, between) disciplinary boundaries and not fitting

[28] Hays, 33-35.

[29] Brian Massumi, "Introduction" in *Parables for the Virtual: Movement, Affect, Sensation* (Durham, NC: Duke University Press, 2002) 1-21 (4).

[30] Carlo Ginzburg, "Morelli, Freud and Sherlock Holmes: Clues and Scientific Method," *History Workshop* No. 9 (Spring 1980): 5-36.

into received narratives of Soviet "revolutionary" art, they have seldom been noticed by subsequent scholars. Devoted to the architectural pedagogy of Nikolai Ladovskii and his group at VKhUTEMAS (*Vysshie khudozestvenno-tekhnicheskie masterskie,* Higher Art and Technical Studios; since 1927, VKhUTEIN, *Vysshii khudozhestvenno-tekhnicheskii institut,* Higher Art and Technical Institute), the first chapter will focus on a project of designing the unconscious perception of architectural form. The second chapter will assess the development of Soviet theory of wall-painting—a discipline imported by the master of the Bauhaus wall-painting workshop Hinnerk Scheper to the USSR, where it merged with Soviet, particularly with the Constructivist interest in exploring the effects of architectural environments upon working productivity. Finally, my third chapter will focus on the development of the Soviet theory of landscape architecture: the so-called "parks of culture and leisure" were designed as spaces of personal transformation through mass participation. I hope that by exploring these peripheries of early-Soviet modernism—a periphery free both from an excessive public attention of contemporaries and from the weight of later scholarly interpretative traditions—this dissertation will delve into the processes of architectural *thinking* and *theorization*, bringing to light and interpreting ideas that ultimately determined the visual language of the Soviet "avant-garde."

Discursive Framework: Energy, Life, the Unconscious

Russian and Soviet psychological discourse of subjectivity emerged in the context of European intellectual culture, in which the notion of the unconscious circulated amidst a constellation of related ideas. Theories as different as Darwinism, psychophysics, psychophysiology, empiriocriticism, vitalism, psychotechnics, and psychoanalysis all

demonstrated an adherence to a set of common principles and key notions: apart from the unconscious, these included such concepts as life, work, attention, and energy.

Following the developments in the theory of electromagnetism, the concept of energy [*Kraft*] appeared in German philosophical discourse as early as the 1840s as one of the foundational notions of the "dematerialized materialism" of scientists like Hermann von Helmholz, Ernst Haeckel, and Wilhelm Ostwald, which discovered energy as the source of all mechanical, and thus of all human work.[31] In 1847, in his book *Über die Erhaltung der Kraft* (On the Conservation of Force), Helmholtz formulated what became widely recognized as the law of the conservation of energy and the first law of thermodynamics: energy can be neither created nor destroyed (a *perpetuum mobile* was, thus, theoretically impossible), but it could be transformed from one type to another. Later on, in the 1860s, the discovery of the second law of thermodynamics, which postulated an inevitable loss of energy during the process of its conversion and ensuing entropy, added an even more pessimistic note to this idea. Now, energy was understood as a scarce and ever-diminishing resource, whose inevitable exhaustion would one day lead the Earth to an eschatological end.[32]

Energetics soon became so important that it began to be viewed as an alternative to mechanicism—as a modern research paradigm that replaced the outdated materialist notion of atoms with a contemporary concept of energy.[33] In 1855, William John Macquorn Rankine

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[31] Anson Rabinbach, *The Human Motor: Energy, Fatigue, and the Origins of Modernity* (New York: Basic Books, 1990) 45-51.

[32] Rabinbach, 61-64.

[33] See, for example, Abel Rey, *L'énergétique et le mécanisme du point de vue des conditions de la connaissance* (Paris, F. Alcan, 1905); Boris S. Bychkovskii, *Sovremennaia filosofiia. Problema materii i energii* [*Contemporary philosophy: The problem of matter and energy*] (Sankt-Peterburg: T-vo Pol'za, 1911).

elaborated the principles of the new science in his *Outlines of the Science of Energetics*, which suggested reformulating dynamics in terms of energy and its transformations. Energetics and energeticsm as a broader worldview based on the primacy of energy over matter (a principle sometimes also formulated as their identity) became extremely popular towards the end of the nineteenth century, and was represented by many prominent scientists and social thinkers. Henri Poincare believed that the principle of the conservation of energy could be used as the starting point for the discovery of other, hidden, physical laws.[34] Wilhelm Ostwald interpreted every physical activity (movement, beat, pressure, and so on) as a different kinds of energy.[35] Social theorist Gustave Le Bon, whose views on mass psychology enjoyed a great popularity in Russia (and, as the third chapter of this dissertation will demonstrate, impacted Soviet aesthetic theory), developed a physical theory of his own, according to which, atoms were nothing but whirlpools of energy.[36] Similarly, Pierre Duhem developed an anti-mechanist theory of thermodynamics, in which the notion of energy occupied the position previously held by atoms.[37] Russian thinker Aleksandr Bogdanov applied the principles of energetics to psychology in his science of psychoenergetics [*psikho-energetika*], which postulated the measurability and equivalence (that

[34] See, Henri Poincaré, *La valeur de la science* (Paris: Flammarion, 1905).

[35] See, in particular, Ostwald's *Die u¨berwindung des wissenschaftlichen materialismus . Vortrag, gehalten in der dritten allgemeinen sitzung der versammlung der Gesellschaft deutscher naturforscher und a¨rzte zu Lübeck, am 20. september 1895* (Leipzig: Verlag von Veit & Comp., 1895); and his *Grundriß der Naturphilosophie* (Leipzig: Verlag von Philipp Reclam jun., 1908).

[36] Gustave Le Bon, *L'Évolution de la Matière* (Paris: E. Flammarion, 1905); Gustave Le Bon, *L'Évolution des Forces* (Paris: E. Flammarion, 1907). More on the history of European and Russian energetics, Bychkovskii, *Sovremennaia filosofiia. Problema materii i energii.*

[37] Pierre Maurice Marie Duhem, *Traité d'énergétique ou de thermodynamique générale* (Paris: Gauthier-Villars, 1911).

is, a possibility of replacing one with another) of psychic events.[38] A major source of influence for Bogdanov and a correspondent of Duhem, Austrian physicist and philosopher of science Ernst Mach asserted energy conservation as a fundamental principle of both physics and epistemology.[39]

This idea was subsequently developed by the other leader of empiriocriticism (as this philosophy of science came to be known) Richard Avenarius, whose teachings, as this dissertation will demonstrate, were particularly popular and influential in Soviet culture.[40] Every mental act, for the philosopher, required spending physiological energy ("The term energy [*Kraft*] we are using here mostly in its physiological meaning; the sensations of strength and weakness, relief and burden, might and exhaustion are considered here only as the concomitant phenomena of consciousness,"[41] defined energy Avenarius). Although saving mental energy was the goal of any philosophy, Avenarius believed that a simple accumulation of energy was just as

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[38] Aleksandr A. Bogdanov, *Empiriomonizm: stat'i po filosofii* [*Empiriomonism: philosophic essays*], Vol. 1 (Moskva: Izd-vo S. Dorovatovskago i A. Charushnikova, 1904) 94-124; Vol. 2 (Moskva: Izd-vo S. Dorovatovskago i A. Charushnikova, 1905) 43-50.

[39] Ernst Mach, *History and root of the principle of the conservation of energy* (Chicago: The Open Court, 1911), original German edition 1871. See also Luca Guzzardi, "Energy, Metaphysics, and Space: Ernst Mach's Interpretation of Energy Conservation as the Principle of Causality," *Science & Education* (October 2012).

[40] Although they never met personally, Mach and Avenarius corresponded and acknowledged each other's contributions since 1880. If Mach, the physicist, explored the projections of physical environment upon human consciousness, the philosopher Avenarius examined how consciousness analyzed these projections, inquiring into laws and patterns of the human mind. A Russian translation of Avenarius's book *Philosophie als Denken der Welt gemäß dem Prinzip des kleinsten Kraftmaßes. Prolegomena zu einer Kritik der reinen Erfahrung* (*Philosophy as thinking about the world according to the principle of minimal waste of energy. Prolegomena to a critique of pure experience*, 1876) came out in 1913. Alongside Mach and Avenarius, the third leading proponent of empiriocriticist philosophy, whose work was well-known in Russia, was Joseph Petzoldt (1862-1929).

[41] Richard Avenarius, *Philosophie als Denken der Welt gemäß dem Prinzip des kleinsten Kraftmaßes* (Leipzig, Fues's Verlag, 1876) 3. Translation by the author. German original: „Kraft ist hier zunächst in dem Sinne der Physiologie genommen; die Empfindungen der Kraft oder Schwäche, der Erleichterung oder Beschwerde, der Erholung oder Erschöpfung werden nur als begleitende Bewusstseinserscheinung betrachtet."

harmful as its excessive loss, for it led to energetic "obesity": passivity, laziness, and weakness. Instead, he developed a theory of energy balance, based on the notion of *Vitaldifferenz* (life-difference): since life was based on a two-way flow of energy between the life system and its environment, the psychic life of an individual, for Avenarius, was a balance of two processes, assimilation, or the acquisition of energy from external environment, and desassimilation, or the loss of energy of the organism to it.

In physics, the notion of *Kraft* was traditionally associated with muscular work, being referred to as *effort* by Leonhard Euler in the eighteenth century and as *travail* by Jean-Victor Poncelet in the first half of the nineteenth one. In general, during the nineteenth century, the word "effort" was used by psychologists, whereas physiologists preferred a more scientific "energy." Since a decrease in energy was associated with feelings of fatigue, the opposition of energy and fatigue became a trope of nineteenth-century physiology, quickly penetrating into the discourse of more subjectivist psychological approaches, and subsequently leading to a host of various psychological and sociological disciplines and practical methods of organizing industrial work, ranging from social helmoltzianism to Taylorism, from neurasthenia treatment to psychotechnics.

Freud's teacher Ernst von Brücke, a professor of physiology at the University of Vienna, introduced a science of psychodynamics, which presented all organisms, humans notwithstanding, as systems of energy, subjected to the law of its conservation. A son of a painter, Brücke also maintained a keen interest in the perception of art and authored books explaining the laws of color perception, perspective, and visual illusions from a physiological

point of view.[42] Freud's interpretation of humans as repositories of libidinal energy develops Brücke's ideas, while the term "psychodynamics" was later used to refer to a psychoanalytical approach of Freud's students and followers Carl Jung, Alfred Adler, and Melanie Klein.

Concurrent to energetics, another kindred, school of thought impacted the intellectual life of the nineteenth century. This was the theory of evolution, arising initially with the publication of Jean-Baptiste Lamarck's *Philosophie zoologique* in 1809, and culminating with Charles Darwin's *On the Origin of Species*, which followed half a century later. Ernst Mach, who came of age as a scholar immediately after the publication of Darwin's major work in 1859, acknowledged the influence of evolutionary theory upon his thought: philosophy and science, as well as other forms of cultural activity, were, for him, nothing else but higher adaptational mechanisms:

> We are prepared, thus, to regard ourselves and every one of our ideas as a product and a subject of universal evolution; and in this way we shall advance sturdily and unimpeded along the paths which the future will throw open to us.[43]

In 1865, Herbert Spenser in his *Principles of Biology*, having introduced the term "survival of the fittest," suggested enriching Darwin's theory with the Lamarckian idea of an inheritance of adaptational transformations of organs, and finally to apply this new evolutionary theory to thinking about society. Spenser's "synthetic philosophy" postulated that all forms of life followed the same laws—above all those of evolution—and treated society as a "social organism."

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[42] Ernst Wilhelm von Brücke, *Die Physiologischen Grundlagen der neuhochdeutschen Verskunst* (Wien: C. Gerold, 1871); Ernst Wilhelm von Brücke, *Bruchstücke aus der Theorie der bildenden Künste* (Leipzig: Brockhaus, 1877); Ernst Wilhelm von Brücke, *Die Darstellung der Bewegung durch die bildenden Künste* (Wien: n.p., 1881); Ernst Wilhelm von Brücke, *Die Physiologie der Farben für die Zwecke der Kunstgewerbe* (Leipzig: n.p., 1887); Ernst Wilhelm von Brücke, *Schönheit und Fehler der menschlichen Gestalt (*Wien: Braumüller, 1891).

[43] Ernst Mach, *Popular Scientific Lectures*, trans. T. J. McCormack (La Salle: Open Court, 1986) 233.

Alongside adaptation, other forms of biologization penetrated cultural thought: instinct and reaction, response to a challenge, survival and reproduction of a species, and many other originally biological notions were commonplace. As the notion of the cultural process was thus biologically reinterpreted, the mechanisms of its—collective—adaptation and survival were to be conceived differently from those of an individual subject. Rationalizing, judging thought (an act that always takes place within an individual mind), and other strictly individual processes, were found to be superfluous to the a description of informational flow within humanity as a whole. Instead, a new form was suggested that allowed speaking about collective conscious and the transmission of knowledge within the genus—the *un*conscious.

The notion of the unconscious [*das Unbewusste*], which was first introduced to German philosophical thought by Johann Friedrich Herbart in his *Psychologie als Wissenschaft* in the 1820s, was for the first time elevated to a major philosophical principle in the work of German thinker Eduard von Hartmann (1842-1906), particularly, in his *Philosophie des Unbewussten* (1869).[44] Acting as a force common to people and animals alike, Hartmann's unconscious performed purely biological, evolutionary functions. Hartmann argued against Darwin's vision of natural selection as the prime mechanism of evolution, supporting, instead, a neo-Lamarckian theory of adaptation. If Darwinism, for him, professed a "mindless causality," effectively denying the possibility of adaptation, Hartmann's unconscious provided evolution with a

[44] In Herbart's epistemology, consciousness was represented as a pool (the line of water being the threshold of consciousness), in which some ideas rose while others sank only to reemerge out the depth of the unconsciousness, when they were triggered by associations to conscious ideas. Harry Francis Mallgrave and Eleftherious Ikonomou, "Introduction" in *Empathy, Form, and Space: Problems in German Aesthetics, 1873-1893* (Santa Monica, CA: Getty Center for the History of Art and the Humanities, 1994) 1-88 (11, 24).

teleological, guiding channel, through which the species could move towards its biological goal.[45] Not chance but logic, even if unconscious, directed evolution.

Hartmann's thinking drew upon Schopenhauer's *Die Welt als Wille und Vorstellung* (*The World as Will and Representation*, 1818). Agreeing with the fundamental premise of Schopenhauer's work, Hartmann felt that Schopenhauer strongly privileged will against its counterpart, representation; Hartmann, therefore, devoted his work to an exploration of the fundamental importance of the latter. Presaging Ernst Bloch's notion of utopia, Hartmann pointed that will is impossible without an image of the desired result, i.e. without representation; in this way the will can only exist as a representation. This representing will, Hartmann believed, could exist either as an individual or as an objective phenomenon. The latter was a metaphysical spiritual principle [*geistige Ursache*] existing independently of individual cognition, a universal and collective representing will that Hartmann called the unconscious. Thus, Hartmann's unconscious—unlike the concept in Freud's interpretation—existed not at the bottom of an individual psyche, but as a locus of collective will: "When we… view the world as a whole, the expression 'the unconscious' acquires the force not only of an *abstraction* from all unconscious individual functions and subjects, but also of a *collective,* comprehending the foregoing both extensively and intensively."[46] This interpretation, in fact, led Hartmann in later editions of his work to replace the term *das Unbewusste* with *das Überbewusste* (superconscious)—here a parallel with Freud's *Über-ich* is helpful again—which reflected the connection of the notion with social experience.

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[45] Hartmann, vol.1, 44. Hartmann later developed his polemics with Darwinism in a book *Wahrheit und Irrthum im darwinismus. Eine kritische darstellung der organischen entwickelungstheorie* (Berlin, C. Duncker, 1875), Russian translation 1906.

[46] Hartmann, vol. 1, 4-5. Hartmann's emphasis.

The social, species character of the unconscious was accepted by most of its subsequent theoreticians—in fact, Freud's interpretation of the unconscious as a product of individual childhood experience was rather unusual. Similarly to Hartmann, Carl Gustav Jung was convinced of the a biological nature of the unconscious (which he termed "collective"), arguing that alongside consciousness "there exists a second psychic system of a collective, universal, and impersonal nature..."[47] This collective unconscious, Jung believed, was inherited, rather than developed individually. Likewise, Gustave Le Bon discovered a second, unconscious layer of the soul that was responsible for collective identity. For both Jung and Le Bon, as well as for Hartmann, the unconscious was identical in all people: for psychology, this meant that it possessed experimentally discoverable laws and could be analyzed scientifically.

The biological, physiological nature of the unconscious did not, however, necessarily lead to its absolute separation from reason. On the contrary, their relationship formed a complex dialectics—to such an extent that in the philosophical system of Richard Avenarius the unconscious considered a vital tool of the cognitive process. Thinking, or inventing new notions, was according to Avenarius inherently unhealthy, and whenever possible the soul [*Seele*][48] tended to replace it with alternative strategies. Key among those were association and habit [*Gewohnheit*], both of which allowed for the economization of energy by displacing perception into the domain of the unconscious. Habit, the major strategy of economizing perceptive energy, for Avenarius, was tightly connected with the emotion of pleasure, the familiar assuring and the unfamiliar bringing discomforting feelings.

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[47] Carl G. Jung, *The Archetypes and the Collective Unconscious* (New York: Pantheon Books, 1959) 43.

[48] Contemporary cognitive science would have used the term "brain."

> If we face the opposite of the familiar, the unfamiliar, it will become clearer to us that the habit illustrates the tendency of the soul to economize energy. I hardly believe that everyone who thinks of the notion "unfamiliar" does not feel at least a slight shadow of displeasure; at any event, he feels this displeasure when he really must think of the unfamiliar. To put it simply, [this happens] because the [idea of] the unfamiliar is an unfamiliar thought, i.e. a thought that exceeds familiar thoughts. Every notion which is not contained within the system of our already acquired and tightly connected between themselves notions, and which to think we nevertheless have to consider through some relationship —be it a discovery, a conversation, or a new book or something else— clearly makes our soul experience fear or hostility at the necessity of thinking about the new alongside the old. Such a thought, such a notion is "uncomfortable" for us and we react at it with displeasure... [49]

Avenarius's theory of unconscious thinking brought the evolutionary and energetic discourses together, integrating them into an ostensibly anti-metaphisical, strictly scientific philosophical system. It responded to the dearest aspirations of radical intelligentsia in Russia, with whom it became highly popular both before and after 1917, impacting revolutionary art, culture, intellectual life, and not least architectural theory. The role of the unconscious at "the turning points of history" noticed by Benjamin in the "Work of Art in the Age of Mechanical Reproduction"[50] was well understood in a society that aspired to transform the everyday life, habits and worldview of its members—and even more, to control human subjectivity changing not only the content of people's minds, but also the way in which their minds operated.

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[49] Avenarius, *Philosophie als Denken der Welt...*, 8-9. Translation by the author. German original: „Dass somit die Gewohnheit das Sterben der Seele nach Kraftersparniss illustrire, wird uns noch deutlicher, wenn wir den Gegensatz des Gewohnten, das Ungewohnte in's Auge fassen. Ich glaube kaum, dass Jemand die Vorstellung „Ungewohntes" denkt, ohne einen wenn auch noch so leisen Anklang von Unlust in sich zu fühlen; jedenfalls fühlte er diese Unlust, wenn er Ungewohntes wirklich denken soll. Einfach, weil Ungewohntes denken ein ungewohntes Denken, d.h. ein das Gewohnheitsmass überschreitendes Denken ist. Eine jede Vorstellung, welche nicht in dem System unserer bereits erworbenen, unter sich fest verbundenen Vorstellungen enthalten ist, und welche zu denken wir dennoch durch irgend welche Verhältnisse—sei es ein Entdeckung oder ein Gespräch oder ein neues Buch oder was immer— genötigt werden, lässt uns deutlich die Scheu oder Abneigung der Seele vor dem Ungewohnten empfinden, vor dem Zwang, neben dem Alten ein Neues zu denken. Ein solches Denken, eine solche Vorstellung ist uns „unbequem" und wir reagieren darauf mit Unlust..."

[50] Walter Benjamin, "The Work of Art in the Age of Mechanical Reproduction," 240.

Soviet Economic and Cultural Context

> Communism is the power of the Soviets plus the electrification of the entire country.
>
> Vladimir Lenin

The period of modernist architectural experimentation in Soviet Russia covered by this dissertation is framed on one end by the year 1919, when earliest Soviet modernist architectural organization *Sinskul'ptarkh* was established, and on the other (somewhat more roughly) by the year 1935, when architectural discourse finally stabilized around the canon of "Socialist Realism."[51] It is particularly focused on the period between 1928 and 1932, the era of the so-called First Five-Year Plan. It was during the First Five-Year Plan that the foundations of an industrial economy were to be laid out as a *tour de force* of collective work, and it was then when the most intense architectural discussions on ways of economizing human energy took place. Moreover, although numerous examples from across the USSR could have contributed to the comprehensiveness of the picture, the dissertation focuses on events and discussions that happened in Moscow—the country's new and old capital (which had regained this status in 1918). The seat of state bureaucracies, in a situation when all accepted cultural life was patronized by the state, Moscow became the place of most active theorizing and debate.[52]

[51] The end day of Soviet avant-garde is usually dated to 23 April 1932, when the decree of the Central Commitee of the Communist Party "On the Reconstruction of Literature and Artistic Organizations" replaced all independent artistic groups with a system of "creative unions" (including the Union of Architects) analogous to trade unions that united members of other professions. The creation of a single architectural organization intended to eliminate a disturbing plurality of schools and approaches and develop "Socialist Realism" as the single "style" of Soviet architecture. After a discussion that lasted several years, the canon of Socialist Realism finally solidified around 1935.

[52] The most significant omissions from the story are the events that took place in Leningrad (St. Petersburg), the seat of such important for Soviet culture organizations as GINKhUK (Gosudarstvennyi institut khudozhestvennoi kul'tury, State Institute of Artistic Culture) and IZORAM (IZO rabochei molodezhi, the Art of Working Youth).

Initiated by independent and state institutions alike, this debate centered on questions important for the new state, a key among which were those concerning the economy of human energy as an industrial resourse.

Energy—particularly, electrical energy—was both an economic priority and a symbol of the revolution of 1917. As a resource indispensible for melting metal, it was to become one of the most important components of Soviet industrialization. As a symbol of progress and enlightenment, it was to bring modernity to the most remote corners of the former Russian Empire. In 1920, at Lenin's request, a commission headed by his close friend Gleb Krzhizhanovskii was formed. It included 200 scientists and engineers, who worked on the development of the "The State Plan of the Electrification of Russia" [*Gosudarstvennyi plan elektrifikatsii Rossii*, or GOELRO].[53] This first large-scale Soviet economic plan, whose implementation was to take ten to fifteen years, covered not only the production and distribution of energy, but the country's entire economy, the core of which was to be energy. A series of hydroelectric power plants (among them, the iconic Dneproges [Dnepr hydroelectric plant] in Zaporozh'e, now Ukraine, designed by Viktor Vesnin and Nikolai Kolli among others, and finished in 1927) was to provide electricity to newly organized coal development and metal production facilities, as well as to giant industrial enterprises, such as the Stalingrad tractor factory, founded in 1927.

When announced in 1920, GOELRO seemed a utopia even for the supporters of bolshevism. For example, even British science fiction writer H. G. Wells, a devoted friend of the new regime, could not overcome his disbelief in the program:

[53] Among the latter was father Pavel Florenskii (an engineer by his first education), a VKhUTEMAS teacher, a supporter of empiriocriticism, and the author of celebrated studies on reverse perspective in Russian icon painting.

> Did I realise what was already in hand with Russia? The electrification' of Russia?
>
> For Lenin, who like a good orthodox Marxist denounces all "Utopians," has succumbed at last to a Utopia, the Utopia of the electricians. He is throwing all his weight into a scheme for the development of great power stations in Russia to serve whole provinces with light, with transport, and industrial power. Two experimental districts he said had already been electrified. Can one imagine a more courageous project in a vast flat land of forests and illiterate peasants, with no water power, with no technical skill available, and with trade and industry at the last gasp? Projects for such an electrification are in process of development in Holland and they have been discussed in England, and in those densely-populated and industrially highly-developed centres one can imagine them as successful, economical, and altogether beneficial. But their application to Russia is an altogether greater strain upon the constructive imagination. I cannot see anything of the sort happening in this dark crystal of Russia, but this little man at the Kremlin can; he sees the decaying railways replaced by a new electric transport, sees new roadways spreading throughout the land, sees a new and happier Communist industrialism arising again. While I talked to him he almost persuaded me to share his vision.[54]

For Wells, as for many others, GOELRO was a miracle that Lenin's magic enthusiasm aspired to perform, an enthusiasm capable of infecting others and thus bringing even the

most unrealistic dreams to life. Tightly connected with Lenin's name and personality, the electrification of Russia found its symbol in a simple uncovered light-bulb hanging down from the ceiling in a peasant home. Still a familiar expression in contemporary Russia, the so-called "Il'ich light-bulb" [*lampochka Il'icha*], symbolizing the progress brought to Russian village by the revolution, appeared in Soviet propaganda after Lenin opened a power station in a remote village over hundred kilometers from Moscow in November of 1920.[55]

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[54] H. G. Wells, *Russia in the Shadows* (1921). Web. 3.28.2014. <http://gutenberg.net.au/ebooks06/0602371h.html>.

[55] Il'ich was Lenin's patronymic, often used by Soviet propaganda as a familiar, unofficial way of addressing the leader. The power station in Kashino village in Volokolamskii raion, 128 kilometers to the west of Moscow, was opened in November 1920.

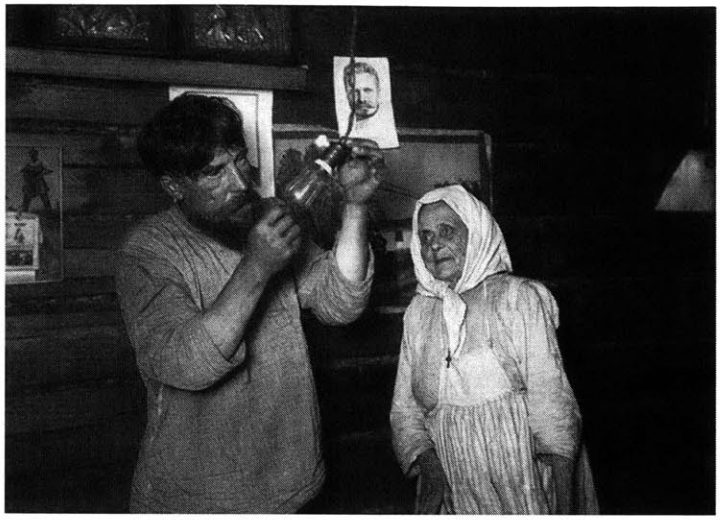

Fig. 1.1. Arkadii Shaikhet, *Il'ich's Light Bulb*, 1925.

Lenin's contagious enthusiasm proved to be stronger than Wells's doubt: the seemingly unrealizable GOELRO plan was finished ahead of schedule in 1931. By that time, Lenin had passed away, and although his mummified body still participated in the political life of the country from the marble shrine of the Mausoleum on Red Square, the completion of the plan became a major task and the mark of pride for the new leader. An heir to GOELRO, the much more ambitious First Five-Year Plan (1928-1932) announced by Stalin aspired to transform a poor agrarian country, devastated by the revolution and the civil war, into a modern industrial state in the course of five years. Focused on the creation of heavy industry—the means of production—with the help of Western, particularly American engineers and technologies, the plan enabled an exponential expansion of metal processing and the production of machinery.[56]

Soviet cultural elite and left intelligentsia enthusiastically supported the goal and methods of the First Five-Year Plan, seeking to contribute to its implementation. The year 1928 marked not only the launch of the Plan, but also of a new cultural policy of the Soviet state. As Sheila

[56] Among foreign companies actively working in the USSR were Siemens-Schuckertwerke AG and General Electric. In 1928, American engineer Albert Kahn established an office in Moscow, which, employing 25 American engineers, in the course of two years prepared four thousand Soviet engineering specialists and prepared projects and technical documentation for 521 factories (See, Richard Anderson, "USA/USSR: Architecture and War," *Grey Room* No. 34 (2009): 80-103). As a result of these efforts, already during the ten pre-WWII years the USSR produced 40% of world tractors.

Fitzpatrick argued in her seminal 1974 publication, which compares the expression of early-Soviet propaganda with that of later Chinese history, during the years of the First Five-Year Plan, the Soviet "cultural revolution" marked the turn from bourgeois cultural development to the beginning of class struggle between "proletarian communists" and "bourgeois intelligentsia."[57] Although Fitzpatrick's conclusions sometimes took the rhetoric of the time at its face value, her emphasis on class struggle in culture pointed to an important factor of Soviet culture of the First Five-Year Plan: a return to the first post-revolutionary years' heroic discourse informed by the Romanticism of revolutionary struggle. In architecture, the late 1920s saw a return to post-revolutionary radicalism, allowing Manfredo Tafuri and Francesco Dal Co to call this period in the USSR a second avant-garde, which followed the "first" avant-garde of the early 1920s. It was exemplified by the emergence of the concept of the house-commune, the socialist settlement discussion, Tatlin's "Letatlin," and Ivan Leonidov's "utopian" projects.[58] The projects discussed in this dissertation—the psychotechnics of Nikolai Ladovskii, the wall-painting of Hinnerk Scheper and Moisei Ginzburg, and Betti Glan's concept of the park of culture and leisure—complement this list.[59]

Yet, the "second avant-garde" detected by Tafuri and Dal Co was hardly a uniquely Soviet phenomenon. A similar revival of "revolutionarism"—as well as a similar turn to

[57] Sheila Fitzpatrick, "Cultural Revolution in Russia 1928-32," *Journal of Contemporary History,* No. 9 (January 1974), and Sheila Fitzpatrick, *Cultural Revolution in Russia, 1928-1931* (Bloomington: Indiana University Press, 1978). For a recent discussion of Fitzpatrick's notion, see a debate in *Russian Review* 58, No. 2 (1999): Michael David-Fox, "What is cultural revolution?" *Russian Review*, Vol. 58, No. 2 (1999): 181-201; Sheila Fitzpatrick, "Cultural Revolution Revisited," *Russian Review* Vol. 58, No. 2 (1999): 202-209; and Michael David-Fox, "Mentalite or Cultural System: A Reply to Sheila Fitzpatrick," *Russian Review* Vol. 58, No. 2 (1999), 210-211.

[58] Manfredo Tafuri, Francesco Dal Co, *Klassische Moderne* (Stuttgart: Deutsche Verlags-Anstalt, 1988) 195.

[59] An exception is Nikolai Ladovskii's "psychoanalytical method," which belongs to a previous tradition, focused on economizing rather than spending energy.

dictatorial politics in Germany and other Western countries— can be discerned in the cultures of other European countries: Karl Ehn's Karl-Marx-Hof in Vienna (1927-1930), the organization of CIAM in 1928, and the tenure of Hannes Meyer as the director of the Bauhaus (1928-1930), can all be viewed as examples of a similar tendency towards total planning, grand scale, and rationalization. The eager collaboration of the avant-garde with political power conformed to the much later assessment by Boris Groys, who saw the will to power as an innate driving force of early modernist art and architecture. But in contrast to this controversial cultural explanation, a different, historical point can be made: architecture's new ambitions, above all its refashioning as urbanism, required a wholly new level of collaboration with the state and municipal bureaucracies, a partnership that preferably involved access to administrative and even political power.

While Michael Hays has characterized precisely these new ambitions of art and architecture as posthumanism, he did not connect them with a particular time period within early modernism. Unlike his study, this dissertation suggests that the peak of posthumanism can be located within a relatively narrow historic period, namely the era that witnessed the conjuncture of the First Five-Year Plan in the Soviet Union, the increasing influence of the Nazis in Germany, and a turn toward a stronger role of state throughout the Western world in the aftermath of the 1929 economic crisis. I will argue that it was the possibility of participating in the implementation of the Plan, the symbol and epitome of posthumanism's fascination with planning and rationalization—rather than lucrative contracts, naiveté or persecutions at home—that attracted the Western avant-garde: among those who moved to the USSR were artists Bela Uitz (1926); Hinnerk Scheper (1928), Erich Borchert (1929), Heinrich Vogeler (1931); architects

Hannes Meyer (1930), Mart Stam (1930), Ernst May (1930), Bruno Taut (1932); photographer Tina Modotti (1931); and sculptors Will Lambert (1934) and Laszlo Mészáros (1935).

The transition from Lenin's GOELRO Plan to Stalin's First Five-Year Plan defined not only a change in economic policy, but also in the official discourse of the Soviet state. If in the early 1920s dialogue and planning focused on the economy and on the production of energy, in the late 1920s it shifted to a discussion of energy spending. The situation was one in which the entire industry was to be created *ex nihilo*, and the builders of new factories and cities could rely only on very primitive, if any, technology and mechanization. The basis of Soviet industrialization was manual labor. As a result, alongside electricity, human energy became reinterpreted as a scarce natural resource, which had to be entirely reserved for the fulfillment of the Plan: it was to be released during work hours and fully channeled into production. During the year 1929, shortly after the First Five-Year Plan was launched, the shock workers [*udarniki*] campaign, which originated in the early 1920s, dramatically increased in popularity, engaging 29% of all industry workers—just a year later, this number further jumped to 65%.[60] As wage differentiation and other capitalist strategies of spurring productivity were inaccessible in socialist Russia, the campaign attempted to explore alternative means of achieving this goal. Working in brigades, shock workers participated in "socialist competitions," whose winners received public recognition and honors, as well as (often) better service in dining facilities and priority in the allocation of scarce goods. However, unlike Stakhanovites—an initiative that replaced shock workers' movement in 1935—who, in a much more capitalist spirit, worked alone and received guaranteed material compensation for extra work, an ideal shock worker was

[60] Lewis Siegelbaum, "The Shock Worker Movement." *Seventeen Moments in Soviet History*. N.p., n.d. Web. 29 May 2014.

driven by enthusiasm and comradely spirit rather than by an expectation of additional remuneration.[61]

Moreover, various techniques of industrial management, such as Taylorism and Fordism, flourished in Soviet Russia from the revolution until the mid-1930s, particularly, during the First Five-Year Plan. The necessity of the "scientific organization of labor" [*nauchnaia organizatsia truda,* NOT] was first formulated by Lenin, who encouraged an exploration of possible ways of labor rationalization. By the mid-1920s, over fifty organizations were preoccupied with this task, among them special departments and laboratories of the Supreme Soviet of the National Economy (an analog of the ministry of economic development) and the ministries, such as the Council on the Scientific Organization of Labor under the Workers' and Peasants' Inspectorate (the ministry of state control and revision). Most importantly, the Central Institute of Labor [*Tsentral'nyi Institut Truda*, TsIT], founded and headed by poet Aleksei Gastev, was created in 1920 and remained active until Gastev's persecution in the late-1930s.[62] Unlike Taylor and Ford, with whom he corresponded, and rather similarly to Frank Bunker Gilbreth, Gastev focused on the human factor of factory work, attempting to rationalize the movements of workers and their use of working time. Gastev was one of the members of the Time League [*Liga Vremeni*] (1923-

[61] Stakhanovites was a movement that appeared in 1935 and was named after a coal-miner Aleksei (born Andrei) Stakhanov (1905-1977), who alone overfullfilled his norm 14-fold) worked alone and were driven by egoistic interests, such as bonuses and prizes . Collectivism and social engineering were now considered inadequate for stimulating work. "It was not our scientific institutes or engineering-technical officials who introduced new methods of work, but Stakhanov, Busygin, Smetanin, and other worker-innovators. ... The fact that it was not engineers and technicians, but the most advanced workers who discovered these new methods ... says that our engineering-technical personnel do not work well at rationalizing production," articulated P. P. Postyshev, the head of the Ukranian party organization, the new Party line in 1935. P.P.P., *Stakhanovtsky—novye lyudi epokhi sotsializma* [*Stakhanovites—New People o the Epoque of Socialism*] (Moskva: s.n., 1935) 26, 59.

[62] In 1926, Gastev's activity brought him the Order of the Red Banner for "an outstanding energy and devotedness to the task."

1926), a research organization devoted to finding ways of economizing time in all aspects of life, and most importantly, at work. Another proponent of NOT, Osip Ermanskii, was an early popularizer of Taylor's system; his own theory was elaborated in *Theory and Practice of Rationalization* [*Teoria i praktika ratsionalizatsii*], which saw five editions between its initial publication in 1925 and 1933. The book suggested that industrial management should be based on the "principle of the optimum," which postulated that rationalization was defined by the relation between an achieved result and the amount of energy spent for its achievement.

Alongside state and factory administrators, psychologists also eagerly explored various techniques of operating with human energy: the two schools of applied psychology, psychotechnics and pedology; as well as psychophysiology, the behavioral disciplines of reactology and reflexology, psychoanalysis, and activity theory all offered different approaches to rationalizing the human working machine. The heyday of applied psychology corresponded exactly to the period of the First Five-Year Plan. A psychological alternative to Taylorism, psychotechnics gained popularity in the USSR in the mid 1920s, offering techniques of industrial management based on differentiential psychology. The All-Russian Psychotechnic Society was founded in 1927; by 1930, there were more than one hundred psychotechnical institutions throughout the USSR. A similar program of individual development was elaborated by pedology, which, unlike psychotechnics, focused on the psychology of children. The first meeting on pedology, which hosted over 350 presentations, took place in Moscow in late 1927 and early 1928. It formulated the discipline's mission as "the process of the production of a new man, [a process] equal to that of the production of new machinery."[63] A particular supporter of these

[63] Russian original: "процесс производства нового человека наравне с производством нового оборудования." Nadezhda Krupskaia et al., "Iz rechei N. K. Krupskoi, N. I. Bukharina, A. V. Lunacharskogo, N. A. Semashko na 1

techniques, and of psycho-physiology in general, was the head of Narkompros (abbreviated from *Narkomat prosveshchenia*, the ministry of culture and education) Anatolii Lunacharskii: out of 55 research organizations connected to Narkompros, 24 explicitly dealt with physiology and psychology, while 79 projects of Narkompros and the ministries of health, labor, and social security were devoted to the study and improvement of socialist workers' physiological and psychological organization.[64] However, the idea of an innate, biological rather than social, basis of intellectual abilities and predisposition for certain work (an idea on which psychotechnics was based) made this science soon fall into disrepute, and after the infamous 1936 decree of the Communist Party Central Committee "On pedological perversions in the system of Narkomproses" applied psychology in all its forms was banned in the USSR.[65]

Narkompros politics was largely defined by the views and theories of its head Anatolii Lunacharskii, a former student of Avenarius in Zurich, and his close friends and collaborators who shared his philosophical and political views, including his brother-in-law Aleksandr Bogdanov (Malinovskii), Bogdanov's schoolmate Vladimir Bazarov (Rudnev), and writer Maxim Gorky (Aleksei Peshkov). Before the revolution the group (which also included other

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pedologicheskom s'ezde" ["From the speeches of N. K. Krupskaia, N. I. Bukharin, A. V. Lunacharskii, N. A. Semashko on the First Pedological Meeting], *Na putiakh k novoi shkole* [*On the Way to a New School*], No. 1 1928: 9-14 (9).

[64] Margarete Vo¨hringer, *Avantgarde und Psychotechnik : Wissenschaft, Kunst und Technik der Wahrnehmungsexperimente in der fru¨hen Sowjetunion*(Go¨ttingen Wallstein, 2007) 38-39.

[65] On the history of Soviet applied psychology and its dissolution, see ; V. A. Kol'tsova, O. G. Noskova, Iu. N. Oleinik et al., "Shpil'rein i sovetskaia psikhotekhnika" ["Shpil'rein and Soviet psychotechnics"], *Psikhologicheskii zhurnal* [*Psychological journal*] Vol. 11, No. 2 1990: 111-133; A. V. Petrovskii, "Zapret na kompleksnoe issledovanie detstva" ["A ban on a comprehensive research of childhood"], *Repressirovannaia nauka* [*Science subjected to repression*], ed. by M. G. Iaroshevskii (Leningrad: Nauka, 1991) 126-136; F. A. Fradkin, *Pedologia: mify i deistvitel'nost'* [*Pedology: myths and reality*] (Moskva: Znanie, 1991); N. S. Kurek, *O prichinakh i sledstviiakh zapreta pedologii i psikhotekhniki v SSSR* [*On the reasons and consequences of the prohibition of pedology and psychotechnics in the USSR*] (Moskva: n.p., 1996).

Bolsheviks), particularly Bogdanov, presented a serious rivalry to Lenin's leadership within the Bolshevik faction. The group opposed, from a radically leftist standpoint, every aspect of Lenin's platform: politically, they were "otzovisty" (left radicals who demanded to withdraw [*otozvat'*] social democratic representatives from the *Duma* [Russian parliament]); spiritually, they were "god-builders" (neo-Romantics who believed in the primacy of spiritual over physical force); philosophically, they were "Machists" (the followers of empiriocriticism of Mach and Avenarius, which accused materialism of metaphysics and argued for a study of perception as the only accessible form of reality). The group enjoyed the reputation as party intellectuals and was indeed preoccupied with philosophical rather than with political and economic theories. In fact Lenin's only philosophical work, *Materialism and Empriocriticism. Critical Notes on One Reactionary Philosophy* [*Materializm i empiriokrititsizm. Kriticheskie zametki ob odnoi reaktsionnoi filosofii*], written in 1908, attempted to annihilate "the Bogdanovites" on their territory—from a philosophical standpoint—breaking the radical intelligentsia's fascination with Machism and attempting to sully their esteem for Bogdanov as its principal representative in Russia. While the book enjoyed only moderate success, Lenin's political attack on Bogdanov was much more effective: in 1909, Bogdanov's position was officially condemned and his group excluded from the Bolshevik faction.

More than a translator of empiriocriticism into Russian, Bogdanov elaborated his own version of the philosophy of Mach and Avenarius: "Instead of this [Avenarius's] theory I gave another one, the origins of which I trace to Spinoza, and the main material for which was provided, in my opinion by the views of Meynert and, partially, by the James-Lange theory of

emotion," Bogdanov explained his philosophical position.[66] In other words, Spinoza's monism, which asserted the unity of matter and spirit (Spinoza's famous axiom was "The order and connection of ideas is the same as the order and connection of things") formed the main reference point for Bogdanov's modification of empiriocriticism.[67] The two other sources were the work of Viennese neuropathologist and anatomist and one of the teachers of Freud, Theodor Meynert, who saw brain anatomy as the key to treating psychological disorders, and by the influential theory of emotion formulated independently by William James and Danish physiologist Carl Lange, according to which emotion was the mind's reaction to a physiological state rather than its trigger.[68]

Furthermore Bogdanov counteracted the ostensible academic obtuseness of empiriocriticism with a Nietzschean exaltation of the strength and energy of life. Arguing against Avenarius's principle of balance between acquisition and expenditure of energy, he claimed that the full equivalence of these two processes would present an ideal conservatism, which was not only unattainable, but also undesirable for living organisms, since, according to Darwinism, "a

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[66] Bogdanov, *Empiriomonism*, Vol. 2, 186. Translation by the author. Russian original: "Взамен этой теории я дал другую, родоначальником которой я считаю Спинозу, а основной материал для которой дан, по моему мнению, воззрениями Мейнерта и отчасти теорией эмоций Джемса-Ланге."

[67] However, in fact, already Fechner asserted a monism of mind and matter, which he considered to be two perspectives on the same object. Likewise, in 1874 W. B. Carpenter in his *Mental Physiology* claimed that "just as a curved surface appeared to convex or concave depending on the angle of vision... so phenomena seemed psychological or physiological." See Daston, 104.

[68] The theory was independently formulated by James and Lange in 1887-1890. Using an example provided by James, we do not see a bear, fear it, and then run. Instead, we see a bear and run – the emotion of fear being the result of our physiological activity (increasing adrenaline level, heartrate, etc.). See William James, *Principles of Psychology,* Vol. 2 (New York: H. Holt, 1890) 468.

condition for the true preservation of life is, in fact, *a change* of its forms."[69] Not an accumulation of energy or its prudent gradual expenditure, but the use of energy for brave, audacious deeds—this was, for Bogdanov and his co-thinkers, the principle of true human development.

Subsequently the principles of life and activity exploded empiriomonism, making Bogdanov leave the domain of philosophy and return to the real world in his "universal organizational science," or tectology (the book *Tectology. The Universal Organization Science* [*Tektologiia. Vseobshchaia organizatsionnaia nauka*] appeared in 1913). While philosophy was characterized by disinterestedness, exploring concepts for their own sake, tectology, Bogdanov argued, put concepts to use as a tool for the planning and structuring of practical activity. The whole complex world of culture—language, ideas and, ultimately, ideology—belonged to the set of tectological instruments. Although subjective in their origin, they served the great objective purpose of reconfiguring the material world: "Tectology does not 'find' the unity of experience, but creates it, actively and organizationally. [...] The explanation of organizational forms and methods by tectology leads not to a contemplation of their unity, but to a practical mastery over them."[70] Thus, rather than decomposing reality into its elements (the task of philosophy, whose

[69] Russian original: «условием действительного сохранения жизни является, вообще говоря, изменение ея форм». Bogdanov, *Empiriomonism*, Vol. 1, 102.

[70] Aleksandr Bogdanov, *Vseobshchaia organizatsionnaia nauka (tektologia)* [*General organizational science (tectology)*].Vol.1 (Sankt-Peterburg: M. I. Semenov, 1913), Vol. 2 (Moskva: Kn-vo pisatelei v Moskve, 1917). Web. 8.7.2014. <http://www.e-reading.ws/chapter.php/81713/33/Bogdanov_Tektologiya_%28vseobshchaya_organizacionnaya_nauka%29.html>. Translation by the author. Russian original: «Для тектологии единство опыта не «находится», а создается активно-организационным путем. [...]Объяснение организационных форм и методов тектологией направлено не к созерцанию их единства, а к практическому овладению ими».

highest point was, for Bogdanov, empiriocriticism), tectology studied the laws of the elements' organization within complexes.

An amalgam of empiriocriticism and vitalism also became the principle behind Lunachskii's *Foundations of positive aesthetics* [*Osnovy pozitivnoi estetiki*, 1903], a declared attempt to build a system of empiriocriticist aesthetics.[71] Applying Avenarius's *Prinzip des kleinsten Kraftmaßes* to aesthetic thought, Lunacharskii argued that everything that increases the amount of energy (*Affectional*, a term he borrowed from Avenarius) in an organism was aesthetic, while everything that decreased it was "anti-aesthetic." Moreover, while Avenarius referred to cognitive energy expended during the perceptive process, Lunacharskii radicalized the hidden evolutionism of energetist discourse in the concept of "vital energy." This continued a tradition founded by the influential nineteenth-century Russian radical aesthetic thinker Nikolai Chernyshevskii (1828-1889). Just as Chernyshevskii's 1855 dissertation, written from a standpoint of Compte's first positivism, "Aesthetic relations of art to reality" ["Esteticheskie otnosheniia iskusstva k deistvitel'nosti"], argued that "the beautiful is life,"[72] so life became the ultimate category of Lunacharskii's aesthetic system and the only aesthetic criterion: beauty was, ultimately, the "mighty and free life" itself.[73] Pleasure experienced in the process of multiplication of vital energy, for Lunacharsky, was the criterion not only for aesthetic, but also for ethical judgments: the only objective basis upon which an animal identified something as good or bad was its personal sensation of something agreeable or disagreeable, that is, of the

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[71] Anatolii Lunacharskii, "Osnovy positivnoi estetiki" ["Foundations of positive aesthetics"], *Ocherki realisticheskogo mirovozzrenia* [*Essays in realist worldview*] (St. Peterburg: Izdatel'stvo S. Dorovatovskogo i A. Charushnikova, 1903) 114-182. Reprinted as a book in 1923.

[72] Russian original: «Прекрасное есть жизнь». Nikolai Chernyshevskii, "Esteticheskie otnosheniia iskusstva k deistvitel'nosti" ["Aesthetic relationships of art to reality"], Chernyshevskii, *Sochinenia v 2kh tt.* [*Works in two vols.*], Vol.1 (Moskva: Mysl', 1986) 76.

[73] Lunacharskii, "Osnovy positivnoi estetiki," 51.

pleasurable or unpleasurable.[74] For Lunacharsky, ethics, aesthetics and epistemology ultimately coincided as good, beautiful, and true had to be defined in the same terms as that which furthered life.[75]

In August of 1909 Bogdanov, Lunacharkii, and Gorky opened a party school on the Italian island of Capri, where Gorky resided, with the purpose of educating a true proletarian intelligentsia, which would replace their own generation of revolutionary intelligentsia of a petty-bourgeois, lesser aristocracy, or a clergy background. Another major and unrealized ambition of the school was a publication of a workers' encyclopedia, which would aim to obtain a revolutionary role and significance similar to that of the French *Encyclopédie*. The school's students were carefully selected by Russian local party committees among worker-activists and smuggled from Russia to Capri, where they learned about the history of Russian empire and the world, literature, the labor movement, and political economy. Although the school declared a non-factional standpoint, it was considered extremely dangerous by Lenin, who started his own alternative party school outside of Paris in 1911.

Even though the school proved to be short-lived and its impact turned out to be minimal, the ideas underlying its program were revived on a much broader scale after the revolution.[76] While the "Leninists" were preoccupied with vital issues of preserving power and solving political, economical and military problems, Bogdanov and Lunacharskii returned to Russia

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[74] David Graeme Rowley, *Millenarian Bolshevism: Empiriomonism, God-Building, Proletarian Culture*. Diss. The University of Michigan, 1982, 68.

[75] Lunacharskii, "Osnovy positivnoi estetiki," 38-39.

[76] Having educated only 13 students, the school closed in December 1909. In 1910, Bogdanov, Lunacharsky, Mikhail Pokrovsky, and their supporters moved the school to Bologna, where they continued teaching classes through 1911 (there, they prepared 21 students). See Zinovia Sochor, *Revolution and Culture: The Bogdanov-Lenin Controversy* (Ithaca: Cornell University Press, 1988) 36.

(where Gorky had remained since 1913). Lunacharskii reentered the Bolshevik faction immediately after his return and, as a result, quickly acquired prominence as the leader of young Soviet culture. Gorky, who reconciled with the Bolsheviks much earlier, instead, left the Party in 1917 in an act of protest against the goals and methods of the October revolution; he left Russia in 1921 only to return for extended journeys in 1928-1929 and then for good in 1931, when he was celebrated as the foremost Soviet writer and the patriarch of proletarian literature. Of the group, Bogdanov alone never fully reconciled with the Bolsheviks. Though, as a result, his impact on Soviet culture proved to be much less than that of Lunacharskii, it was nevertheless extremely important during the first postrevolutionary years, penetrating multiple spheres of intellectual life, including workers' education, art, and even economic planning.[77]

In 1918, Bogdanov founded and headed *Proletkul't*—an organization of workers that aimed at developing proletarian culture, independent of the culture of the bourgeoisie.[78] Funded by the state and existing in parallel to the Narkompros, Proletkul't became an enormous organization with its own publications, theaters, and studios for workers: at the peak of its influence in 1920, it attracted 84 thousand workers and published 20 journals. Highly suspicious of Proletkul't as a stronghold of Bogdanov's influence and opposed to its basic premise—an

[77] For instance, one of the principal foundations of Soviet theory of economic planning, the theory of Bogdanov's old co-thinker Vladimir Bazarov (who remained in Russia and did not participate in the Capri school, joining the Mensheviks in 1917-1919, and who in 1922 became a member of the State Planning Commission [Gosplan] and a leading Soviet theoretician of economic planning), was largely based on Bogdanov's tektology. See, in particular, his *K metodologii perspektivnogo planirovania* [*Towards a Methodology for Strategic Planning*] (Moskva: Gosplan SSSR, 1924). The Mensheviks (literally, "those who are in a minority")—a faction of Russian Social-Democratic Labor Party (RSDPR) that, alongside the Bolsheviks ("those who are in a majority") emerged after a 1903 dispute between Lenin and Julii Martov over the party's organization (Martov's supporters, who proved to be a minority of the delegates, argued for a looser and more flexible organization than that suggested by Lenin, who saw the party as more cohesive and disciplined.

[78] See Bogdanov's works *Iskusstvo i rabochii klass* [*Art and the working class*] (Moskva: Zhurn. "Proletarskaia kul'tura," 1918) and *O proletarskoi kul'ture* [*On the proletarian culture*] (Leningrad-Moskva: Kniga, 1924).

incompatibility of the "old" culture with the new society—in 1920 Lenin succeeded in officially subordinating Proletkul't to Narkompros; a year later, Bogdanov had to leave Proletkul't, and the organization quickly started to lose popularity. Although Proletkul't and Bogdanov's other endeavor in the field of creating proletarian culture—the Proletarian University, which was opened in 1918, but closed half a year later due to the scarcity of resources during the Civil War—proved to be short-lived, his third project, Socialist Academy of Social Sciences (since 1924, Communist Academy), also opened in 1918 with Bogdanov's active participation, remained operative until 1936. Even after the demise of Proletkul't, Bogdanov's vision of proletarian culture and his philosophy remained popular due the work of his allies, most of all Lunacharskii's Narkompros.

Meanwhile, after his return to Russia, Lunacharskii was offered the position of the minister (commissar) of culture and education [*prosveshchenie*], which he occupied until 1929. As the minister who determined Soviet cultural policies for over ten years, Lunacharskii could successfully propagate his opinions through numerous publications, reviews, lectures, and personal meetings with the Soviet cultural elite. When VKhUTEMAS was founded in 1920 as the major Soviet institute of art and design, he of course did not step aside. He was among other matters actively involved in the battles between "realists" and "futurists" (traditionalists and modernists) within VKhUTEMAS, in which he occupied a mediating position, not aligning himself with either of the movements. At Lunacharskii's suggestion, the school accepted a compromise, separating its teaching course into "synthetic" (learning painting in general) and "analytical" (which separately studied different elements of painting) stages, the first satisfying

the demands of traditionalists for learning artistic skill, the second—the demands of modernists for an objective and scientific analysis of artistic principles.[79]

Of the main arguments of this dissertation is that the ideas espoused by Bogdanov, Gorky, and most importantly Lunacharskii were actively studied and developed at VKhUTEMAS and beyond. Architects, artists, and VKhUTEMAS "left" professors like Ladovskii attempted to gain the minister's support for their cause and platform, substantiating their arguments for an analytical approach to art with references to the aesthetic, scientific and philosophical theories promoted by Lunacharskii. The collectivists' frame of reference—their fascination with empiriocriticism, psychophysiology, evolutionism, and vitalism—all entered the intellectual orbit of Soviet architects in the 1920s, despite of the obvious deviation from Leninism in this position. When in 1921 Lenin, famous for his conservative tastes in art, visited VKhUTEMAS, where Inessa Armand's[80] daughter Varvara then studied, he jokingly asked the students: "And, what are you doing at school, fighting with the futurists I assume?" The students replied in a single voice: "No, Vladimir Il'ich, we are all futurists ourselves."[81] Afterwards, the

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[79] In spring of 1921, After Lunacharskii's suggestion, the teaching course was divided into three stages: the preparatory department, where aspiring students had to prove their ability for painting (synthetic method); the basic department, where students learned an analysis of art (analytical method); and the special department, where students mastered the skill of their art (synthetic method). See L. M. Khlebnikov, "Bor'ba realistov i futuristov vo VKhUTEMASe (Novye materialy)" ["Struggle of the realists and the futurists at VKhUTEMAS (New material)"]. Web. 3.18.2014. <http://lunacharsky.newgod.su/lib/lenin-i-lunacharskij/borba-realistov-i-futuristov-vo-vhutemase-novye-materialy>.

[80] Inessa Fiodorovna Armand (born Elisabeth-Inès Stéphane d'Herbenville) was a French born active member of Russian social-democratic movement and a close friend and associate of Lenin.

[81] Sergei Sen'kin, "Lenin v kommune VKhUTEMAS" [Lenin in VKhUTEMAS commune], *Molodaia gvardia* [*Young guard*], No. 2-3 1924. Reprinted in *V. I. Lenin o literature i iskusstve* [*V. I. Lenin on literature and art*] (Moskva: GIKhL, 1967) 717. Translation by the author. Russian original: «Ну, а что вы делаете в школе, должно быть, боретесь с футуристами?» — ему отвечали хором: «Да нет, Владимир Ильич, мы сами все футуристы».

Soviet leader complained to Lunacharskii: "You've got a good, very good youth, but what are you teaching it!"[82]

Of the list of notions at the core of Soviet culture of the 1920s, the notion of energy alone was, perhaps, equally dear to both Lunacharskii and Lenin. "You work a lot, you don't eat very well, and, moreover, don't sleep. Nothing good can come out of you. You'll waste your force in vain and will be good for nothing, whereas one has to preserve [this] 'state property'" Lenin told VKhUTEMAS students, who admitted to him that they spent entire nights arguing about the urgent problems of art.[83] This notion of human energy as valuable property of the state is central to this dissertation. If Lenin's solution to the problem was to turn off the electricity in the dormitory for the night in order to force the students to sleep, in what follows, I will assess architectural responses to the same challenge—responses that took the results of psycho-physiological research as their objective, scientific basis. In so doing, I show how Soviet architects contributed to the posthumanist program of integrating human subjectivity into the overarching system of total planning.

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[82] Sen'kin, 715. Translation by the author. Russian original: «Хорошая, очень хорошая у Вас молодежь, но чему Вы ее учите!».

[83] I. A. Armand, "Vospominania o Vladimire Il'iche Lenine [Recollections about Vladimir Il'ich Lenin]," Institut Marksizma-Leninizma [Institute of Marxism-Leninism], ed., *Vospominania o Vladimire Il'iche Lenine v desiati tomakh [Recollections about Vladimir Il'ich Lenin in 10 vols.]*. Vol. 8 (Moskva: Izd-vo Politicheskoi Literatury, 1991) 99-107 (104). Translation by the author. Russian original: «Работаете вы много,—сказал он им,—питаетесь плоховато, да еще не спите. Из вас никакого толка не получится. Вы зря растратите силы и никуда не будете годиться, а надо беречь «государственное добро». Я дам распоряжение, чтобы в вашем общежитии выключали свет на ночь».

CHAPTER ONE

ECONOMIZING PERCEPTIVE ENERGY: THE PSYCHOANALYTICAL METHOD OF NIKOLAI LADOVSKII AND THE PHILOSOPHY OF EMPIRIOCRITICISM (1919-1927)

> Contemporary aesthetics, say the "Rationalists," lies in the economy of psychophysical energy within a person. The main task of aesthetics is not to teach and contribute to the development of capacities for the passive contemplation and admiration of architectural objects. Rather it is to solve problems through the expression and organization of form and space, which would enable it to raise up, awaken energy, and enrich a person's emotions. (It is not an aestheticization but a healthy aesthetics).[84]

Imagine a spring evening in the year 1920. A cold, poorly lit room at the Second Independent State Artistic Workshops (*Svobodnye Gosydarstvennye Khudozhestvennye Masterskie*, SGKhM), the outpost of artistic avant-garde in post-revolutionary Russia. Unlike the departments of painting and sculpture, the Architecture Department is still run by traditionalists. Unknown to anybody in the audience, architect Nikolai Ladovskii stands to speak. He tells about the drawbacks of the old academic approach to architectural education, which he condemns as a passive imitation that kills live imagination and destroys one's desire to apprehend the real laws

[84] Nikolai Dokuchaev, "Sovremennaia russkaia arkhitektura i zapadnye paralleli" ["Contemporary Russian architecture and [its] Western parallels"], *Sovetskoe Iskusstvo* No. 2 (1927): 5-15 (12-13). Translation by the author. Russian original: Современная эстетика, говорят «рационалисты»--в экономии психо-физической энергии человека. Основная задача эстетики—не учить и способствовать тому, чтобы у потребителя развивались способности пассивного созерцация и любования объектами архитектуры, а решать проблему с такой выразительностью и организованностью формы и пространства, которые были бы способны поднимать, будить энергию, обогащать эмоции человека (не эстетствование, а здоровая эстетика).

and methods of architectural creation. Ladovskii urges architects to think not about the orders and proportions, but about the human who perceives them, arguing that only human emotional and visual perception can form the basis of architectural composition. Most of all, however, the students are struck by Ladovskii's maxim "Space, not stone, is the material of architecture," which defines the discipline as work with the content of subjective perception.[85]

Having rejected old, classical, architectural theory, architects found themselves in a need of a new methodology, a foundation for a new theoretical building. This foundation could leave no place for artistic individualism; rather, it had to be based on the latest scientific achievements and respond to the modern lifestyle. The motto "Space, not stone, is the material of architecture," which Ladovskii articulated at VKhUTEMAS summarizing his project for a new architectural method, offered just such a foundation. It was a product of a cutting-edge, dynamic and complex science—psychophysiology. Moreover, this science seemed to provide a bridge between *Geistwissenschaften* and *Naturwissenschaften*, the sciences of spirit and the sciences of nature, allowing for the analysis and repetition of the subjective, the unique and the individual; its promise was nothing less than the creation of a science of beauty. Developed within the context of experimental psychology, the notion of space signified the subjective side of external three-dimensional reality. From the late nineteenth-century on, it was the subject of many psychological investigations, gaining a new momentum with the emergence of Gestalt psychology. Thus, asserting space as the building block of a new architecture, Ladovskii not only redefined it as working with subjective images rather than material objects, but also pointed to

[85] Selim O. Khan-Magomedov, *Ratsionalizm [Ratsioarkhitektura] "Formlalizm"* [*Rationalism [Ratio-architecture] "Formalism"*] (Moskva: Arkhitektura-S, 2007) 140-143.

the methods of psychological manipulation, developed by scientists, as suitable instruments of architectural work.

Philosophically, the psychophysiological perspective on the material world was expressed and elaborated by empiriocriticism, a school of thought particularly important for Ladovskii and his co-thinkers. Developed by Ernst Mach and Richard Avenarius and highly influential in Russia, empiriocriticism attempted to achieve in the philosophy of science precisely what Ladovskii wished for architecture—a radical revision of its principles and foundations on the basis of the latest findings of psychology. Renouncing ontology for the sake of subjective (psychological) experience, empiriocriticism, for Ladovskii became both a method and a model for architectural theory.

The blow to materialist philosophy that empiriocriticism represented aroused few concerns for the Soviet architect. On the contrary, it attracted Ladovskii, offering him a way to connect the product of architectural work to the subjectivity of the producer and the user. As Mach and Avenarius represented the material world as the sum of the physiological sensations it provoked, so Ladovskii, following their example, attempt to represent architecture not as a material environment, but as its subjective perception. Architecture was dematerialized, and the task of the architect shifted to constructing psychological and physiological sensations that comprised images of architectural structures. The architect, thus turned into a master of the human psyche, and was occupied with its improvement and rationalization. It was in this spirit that Ladovskii interpreted the imperative of the economy of energy: following Avenarius, he proposed to economize the energy of perception. As the philosopher was concerned with economizing intellectual effort, the architect was to save perceptive energy by visually distilling

and emphasizing the building's spatial qualities. Ladovskii summarized the essence of his method:

> Like technical rationality, architectural rationality is based on the principle of economy. The difference lies in the fact that technical rationality is the economy of labor and material expended in the creation of an expedient building, whereas architectural rationality is the economy of psychic energy expended in the perception of spatial and functional qualities of a building. Rationalist architecture is the synthesis of these two rationalities.[86]

This rationalization of perception became Ladovskii's major preoccupation, which encompassed his other concerns: the development of a new visual language for architecture, establishing relationships between physiological sensation and visual form, and developing new pedagogical methods. This ambition of rationalizing perception as a valuable state property, of making it more efficient and economical, was reflected in the expression "rational architecture" [*ratsional'naia arkhitektura; ratsio-arkhitektura*] which the group used to describe its methodology, and which subsequently led to the emergence of the term "Rationalism"; the latter allowed subsequent scholars to avoid using the derogatory "Formalism," a nickname given to the group by their major rivals, the Constructivists, and frequently used in the 1920s and 1930s.[87] The expression "rational architecture" referred to "rationalization" [*ratsionalizatorstvo*], a movement in Soviet post-revolutionary industrial management, which encouraged workers to suggest new, more rational and economical, techniques and methods of their work.[88]

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[86] Ladovskii, "Osnovy postroenia teorii arkhitektury (pod znakom ratsionalisticheskoi estetiki)," 3.

[87] The word "Rationalism" was coined as a counterpart to Constructivism by historian Selim O. Khan-Magomedov. See Margarete Vo¨hringer , *Avantgarde Und Psychotechnik : Wissenschaft, Kunst Und Technik Der Wahrnehmungsexperimente in Der Fru¨hen Sowjetunion*(Go¨ttingen Wallstein Verlag, 2007) 42.

[88] Alongside inventorship [*izobretatel'stvo*], industrial *ratsionalizatorstvo* (rationalization) was introduced in Soviet Russia in the immediate aftermath of the revolution. The Committee on the Inventors and Improvers [*Komitet po delam izobretatelei i usovershenstvovatelei*] was formed in 1918, and "The Statute on Inventors" [*Polozhenie ob*

Throughout the 1920s, Rationalism/Formalism insisted on the necessity of the experimental discovery of laws of perception of architectural forms, which was to be followed by the development of a system of laws that would allow for a synthesis of these forms into complex spatial compositions. In 1920, Ladovskii's group, the Working Group of Architects at the Institute of Artistic Culture (INKhUK),[89] planned to create a "laboratory, spacious enough and equipped for experiments and possessing sufficient resources for making models, various graphic works and approximate architectural stagings, which are so necessary for at least an illusionary representation of space, without which architecture is unthinkable."[90]

This program received a fuller development with the creation of Ladovskii's architectural organization, Association of New Architects [*Assotsiatsia novykh arkhitektorov*], or ASNOVA, in 1923. In addition to Ladovskii, its founding members included Ladovskii's closest associates, Nikolai Dokuchaev and Vladimir Krinskii, the dean of VKhUTEMAS Department of Architecture Aleksei Rukhliadev, architects Efimov and Daniil Fidman, and Ladovskii's first graduates Sergei Mochalov and Viktor Balikhin. ASNOVA's most active members later on belonged to the generation of Ladovskii's students, which in 1923 became professors for the course "Space" (introduction to architecture), which he developed at VKhUTEMAS: Sergei

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izobretateliakh] of the Council of People's Commissars (the government) was passed on June 30, 1919. The movement was revived and activized during the First Five-Year Plan: the All-Union Volunteer Society of Rationalizers and Inventors was created in 1932. See: V. S. Poznanskii, "Na zare sovetskogo izobretatel'stva" ["At the dawn of Soviet inventorship"], *Izobretatel' i Ratsionalizator* [*Inventor and Rationalizer*], No.6 (1959): 1-3; N. Raigorodskii, "Vpervye v istorii" ["For the first time in history"], *Izobretatel' i Ratsionalizator* [*Inventor and Rationalizer*], No.6 (1959): 19.

[89] More on this group and on the INKhUK, see below.

[90] Khan-Magomedov, *Ratsionalizm*, 111. Russian original: «создания и организации лаборатории достаточно обширной и оборудованной для проведения опытов и достаточно богатой средствами для выполнения моделей, макетов, всевозможных графических работ и примерных архитектурных постановок, столь необходимых для создания хотя бы иллюзорного представления пространства, без которого архитектура немыслима».

Glagolev, Mikhail Korzhev, Ivan Lamtsov, V. Petrov, Yurii Spasskii, and Mikhail Turkus.[91] El Lissitskii and Konstantin Mel'nikov were also counted among ASNOVA's members.[92] Together with Ladovskii, Lissitzky co-edited *Izvestia ASNOVA* (No. 1, 1926), a newsletter that was conceived as a Rationalist periodical organ rivaling Constructivist *Sovremennaia Arkhitektura.* However in the tough economic situation of the early Soviet years the publication fell through, and, in spite of another attempt at creating a serial publication three years later (*Arkhitektura i VKhUTEIN*, #1, 1929) the Rationalists never received a venue for publicizing their ideas. Instead, as a method of advertising their platform, they relied on their pedagogical practice at VKhUTEMAS (renamed into VKhUTEIN in 1927) hoping that their graduates would disseminate Rationalist architecture throughout the country. Moreover, because they wer absorbed in pedagogical activity, the leaders of Rationalism—Ladovskii, Krinskii, and Dokuchaev—received relatively few practical commissions. As a result, the Rationalist pedagogical practices at VKhUTEMAS/VKhUTEIN constituted their most significant legacy and therefore present the best material for assessing the group's architectural theory. Venturing into the philosophical genealogy and implications of Ladovskii's architectural theory, this chapter considers empriocriticism and the other psychologizing epistemological and aesthetic theories employed by Ladovskii before turning to an assessment of his pedagogical techniques.

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[91] Among the other members of ASNOVA who had previously studied under Ladovskii were Vitalii Lavrov, Maria Kruglova, Trifon Varentsov, Nikolai Travin, Georgii Krutikov, Liubov' Zalesskaia, Vladimir Myslin, Andrei Bunin, Irina Tikhomirova, Militsa Prokhorova, Ivan Volod'ko, Nadezhda Bykova, Aleksandr Sil'chenkov.

[92] According to *Izvestia ASNOVA*, in one of ASNOVA's meetings Lissitzky lectured on "Contemporary architecture in Europe and America. Impressions of an international trip," whereas at another one Mel'nikov presented on "The construction of Soviet pavilion on the International exposition of decorative art in Paris." See *Izvestia ASNOVA,* No. 1 (1926): 6.

Empiriocriticism

"...The equality of Formalism with Machism, of course, is far from being accidental, as the Formalists profess a subjective idealism in its newer reincarnation, adapted for the demands of our time. This is why particularly Mach, this 'Kant inside out,' is the closest philosophical figure for the Formalists."[93] Thus a Stalinist critic characterized the Rationalist philosophical platform in 1932, explaining the necessity of overcoming sectarian differences (and, with them, ideological deviations) within Soviet architecture. Indeed, at the time when the Plekahnov-Lenin version of dialectical materialism was codified to the status of unquestionable wisdom, Machism, which was vigorously condemned by Lenin in *Materialism and Empiriocriticism* (1909), became a serious political accusation. Not only the Rationalists, but even Stalin had to forget his earlier fascination with empiriocriticist philosophy.[94] In fact, already in 1927, in a vain attempt to vindicate their reputation from frequent accusations (especially by the Constructivists) of Machism, Rationalists Fedor Shalavin and Ivan Lamtsov tried to turn tables and to fight the opponents with their own weapon: "A Constructivist does not accept the fact that human perception is socially conditioned... However, operating with the psychophysiological nature of a human, he cannot help sliding into a Machist swamp, and present us, on the basis of laws of

[93] A. I. Mikhailov, *Gruppirovki Sovietskoi arkhitektury* [*Fractions of Soviet Architecture*] (Moskva: Izogiz, 1932) 45. Russian original: "Совпадение формализма с махизмом, конечно, не случайное, ибо формалисты проповедуют субъективный идеализм в его более новом, приспособленном к условиям времени виде. Вот почему именно Мах, этот "Кант наизнанку", является наиболее близкой философской фигурой для формалистов."

[94] E. Van Ree, "Stalin as a Marxist Philosopher," *Studies in East European Thought*, Vol. 52, No. 4 (2000): 259-308.

psychophysiology, with the notorious Machist "economy of thinking," which has long been burred under the sharp blows of materialist criticism."[95]

Unfortunately for Shalavin and Lamtsov, the word "Machism" remained associated with their own—not their opponents'—theory. Eventually, this contributed to a fuller erosion of Rationalism than that of Constructivism from the annals of early-Soviet architectural history, to a more contemptuous attitude towards its material legacy, and consequently, to its obscurity among architecture historians today. Although Stalinist critics probably understood the potentially disastrous consequences of the charges they were bringing, they—if one is to be fair to them—were giving an insightful scholarly assessment of Rationalist methodology, an assessment that was more insightful in fact than those of later, sympathetic architectural historians, both in Russia and in the West. Indeed, as recently published archival materials testify, Ladovskii not only had a strong interest in Mach's epistemology, but persistently educated his colleagues in it and did not hesitate to call empiriocriticism the philosophical foundation of his architectural theory.[96]

This 1932 squabble—a desperate attempt to save their schools from imminent dissolution within the nascent "socialist realism"—echoed the high esteem for the founder of empiriocriticism Ernst Mach (1838-1916) had enjoyed in early-Soviet culture. Secured by the legitimization of empiriocriticism as a revolutionary theory by the Narkompros and the

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[95] Fedor Shalavin and Ivan Lamtsov, "O levoi faze v arkhitekture (K voprosu ob ideologii konstruktivizma)" ["On the left phase in architecture (To the question of the ideology of Constructivism)"], *Krasnaia Nov'* [*Red Newness*], No.8 (1927): 226-239 (236-237).

[96] Archival documents related to Ladovskii's early theoretical investigations, particularly within the Institute of Artistic Culture (INKhUK), have been published by Selim Khan-Magomedov in: *Ratsionalizm*, 102-138.

Proletkul't,[97] this esteem was rooted in Mach's status as the leading contemporary physicist and philosopher of science, a status that he fully enjoyed during his lifetime both at home and abroad. Max Plank, for example, remembering in his "Scientific Autobiography" the difficulties he had experienced in the 1890s with the introduction of his quantum theory, wrote that "all my sound arguments fell on deaf ears. It was simply impossible to be heard against the authority of men like Ostwald, Helm and Mach."[98] Mach was particularly renowned for his work in thermodynamics, optics, acoustics and the mechanics of supersonic velocity.[99] But these concerns of a practicing physicist made him turn to philosophy, which had failed to provide an adequate substantiation for his experimental work. As the historian of philosophy Anatolii Zotov has argued, the particular philosophical problem that Mach faced concerned the notion of scientific experience: since each experiment had a pre-conceived goal that was known to the experimenter in advance, and since all experiments had to be reproducible, a Heraclitian ever-changing universe (in other words, the materialist conviction that every object is unique) could not conform to the requirement of repeatability. To anchor experimental physics in a permanent and scientific foundation, Mach turned to a new scientific discipline, which had just emerged in

[97] More on both organizations, see the Introduction to this dissertation.

[98] Max Planck, *Scientific Autobiography and Other Papers*, trans. Frank Gaynor (London: Williams & Norgate, 1950) 30.

[99] Ernst Mach (1838-1916) was a physicist, a renowned specialist in the field of thermodynamics, optics, acoustics and mechanics of supersonic velocity. For most part of his professional career, between 1867 and 1895, he held the chair of Experimental Physics at the Charles University in Prague. Dealing with dynamic (both rotating and rectilineal) reference frames, Mach had to reject Newton's notion of absolute space and time, introducing into his physics a principle that Einstein later labeled "Mach's principle" (or Mach's conjecture), which can be generally formulated as ""Local physical laws are determined by the large-scale structure of the universe." See Stephen W. Hawking and George Francis Rayner Ellis, *The Large Scale Structure of Space–Time* (Cambridge University Press, 1973) 1.

the 1870s, the physiological study of human perception, which analyzed perceptual mechanisms by activating them in physical experiments.[100]

Not limiting its influence to physicists, Mach's empiriocriticism became an influential epistemological model that fascinated thinkers across disciplines and geographic borders—or provoked their hatred. Even Lenin—who, as Louis Althusser believed, could have said about himself "I know that my formulations and definitions are vague, unpolished; I know that philosophers are going to accuse my materialism of being 'metaphysical'. ...Whereas I treat philosophy differently, I practice it, as Marx intended, in obedience to what it is. That is why I believe I am a 'dialectical materialist'"[101]—devoted a year of his life (1908) to writing a philosophical work whose sole purpose was to destroy empiriocriticism's influence among Russian revolutionary intelligentsia. The ensuing publication, *Materialism and Empirio-Criticism. Critical Comments on a Reactionary Philosophy* (1909), claimed that hidden behind the façade of Mach's and Avenarius's scientific objectivism was nothing else than subjective idealism, which he traced back to "the old idealist," bishop George Berkeley. Particularly irritating for Lenin was empiriocriticists' rejection of the fundamental for Orthodox Marxism category of matter as metaphysical, that is, speculative and unscientific.[102] The practical, and perhaps, more important, purpose of the work was, however, to discredit his political rival, Aleksandr Bogdanov, who enjoyed the reputation of being the Party's major intellectual and

[100] Anatolii Zotov, "Vmesto predislovia" ["Instead of a preface"], Ernst Mach, *Analiz oschuschenij i otnoshenie fizicheskogo k psikhicheskomu* [*Analysis of Sensations and the Relationship of the Physical to the Psychic*] (Moskva: Territoria buduschego, 2005) 7-30 (13-14).

[101] Louis Althusser, "Lenin and Philosophy" (1968), *Lenin and Philosophy and Other Essays* (New York and London: Monthly Review Press, 1971) 23-68. Web. 4.19.2014. <http://www.marx2mao.com/Other/LPOE70i.html#s2>.

[102] Vladimir Lenin, *Materializm i empiriokritizm. Kriticheskie zametki ob odnoi reaktsionnoi filosofii* [*Materialism and Empiriocriticism. Critical Notes on One Reactionary Philosophy*] (1908). Web. 4.19.2014. <http://magister.msk.ru/library/lenin/len14v01.htm#vved>.

whose philosophical adherence to empiriocriticism was well-known.[103] In 1906, Bogdanov edited the Russian translation of Mach's *Analysis of Sensations.* In the preface, where he attempted to explain "What can a Russian reader seek in Ernst Mach?" Bogdanov charged "comrade Plekhanov[104] and his disciples" (by whom he, of course, meant Lenin) with mummifying Marx, who, in his view, always based social-economical theories on the latest scientific discoveries; thus, for Bogdanov, nothing could be more Marxist than modernizing Marxism according to the latest scientific standard, even if philosophically it meant denouncing materialism.[105]

Although, hidden in the ivory tower of German-speaking academia, neither Mach nor Avenarius ever expressed sympathy for radical political movements, many European socialists accepted empiriocriticism as a kindred philosophical teaching.[106] In Russia, empiriocriticism was embraced by the majority of the radical left intelligentsia, which kept alive the traditions of 1860s nihilism, renouncing all non-physiological explanations of human thoughts and behavior

[103] More on Bogdanov-Lenin controversy see the Introduction to this dissertation.

[104] Russian economist Georgii Plekhanov (1856-1918) was the most prominent of the so-called "Orthodox" Marxists. In spite of some major disagreements, Lenin considered himself Plekhanov's disciple and based his economic theory on Plekhanov's interpretation of Marxism.

[105] Ernst Mach, *Analiz oschuschenij*, 35.

[106] See, for instance, a translation of Friedrich Adler's panegyric devoted to Mach's 70th birthday in *The International Socialist Review*, Vol. VIII No. 10 (April 1908): 577-588. Nevertheless, in the introduction to the Russian edition of "U ber das Prinzip der Erhaltung der Energie"["On the Principle of the Conservation of Energy"] Mach wrote: "I recall that it was particularly difficult for me [as a child] to understand two phenomena: first, I could not understand how the world could find pleasure in subjugating to a king for a single minute. The second difficulty laid in the phenomenon that Lessing so perfectly expressed in the epigram: Es ist doch sonderbar bestellt, Sprach Hänschen schlau zu Vetter Fritzen, Dass nur die Reichen in der Welt Das meiste Geld besitzen [It is very strange, slyly said little Hans to cousin Fritz, that only the richest in the world possess most of money]. Multiple fruitless attempts on the part of my mother to help me solve these two riddles could give her a very bad opinion about my ability to understand things. ... Here, there are two ways of reconciling with reality: either the person becomes used to the riddles and they stop torturing him, or he learns to understand them historically and since then stops to look at them with hatred."

("You and I are just like frogs, except that we walk on two legs," claimed Yevgeny Bazarov, the protagonist of Ivan Turgenev's *Fathers and Sons*[107]). Vladimir Lesevich (1837-1905), the first Russian popularizer of empiriocriticism in the early 1890s, in the 1860s was a member of revolutionary nihilist "peopleist" [*narodniki*] group, later in his life shifting towards more liberal political ideals.[108] Lesevich's book *What is a scientific philosophy?* (on which Lenin commented that the word "scientific" in the title outght to be read "fashionable, professorial, eclectic"[109]) made Anatolii Lunacharskii, then a radically-minded Kiev gymnasium student preoccupied with an attempt "to create an emulsion of Spenser and Marx" turn his attention to empiriocriticism and eventually leave for Zurich in 1895 to study with Avenarius.[110] Lunacharskii's self-designed program of study in Zurich included seminars with first-rate biologists (anatomy with Rudolf Martin, physiology with Justus Gaule, and physiology of perception with Rudolf Wlassak) and third-rate economists and political theorists (political economy with Fritz Platten and Marxism with Russian Menshevik emigrant Pavel Aksel'rod). But, for Lunacharskii, "all this faded into

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[107] Ivan Turgenev, *Ottsy i deti* [*Fathers and Sons*] (1862). *Lib.ru.* Web. 4.19.2014. Russian original: «мы с тобой те же лягушки, только что на ногах ходим».

[108] Vladimir Lesevich, *Chto takoe nauchnaia philosophia* [*What is a scientific philosophy*] (St. Petersburg: Tip. I.N. Skorokhodova, 1891). Another popularizer of empiriocriticism, scientist and writer Mikhail Filippov, who until his death during a chemical experiment was the editor of *Nauchnoe obozrenie* ('Scientific Review,' 1894-1903), a journal that published, alongside Mach, Helmholz, and Bekhterev, the works of Lenin, Plekhanov, and other Bolsheviks. Led by such left positivists as Lesevich and Filippov, Russian revolutionaries adapted positivism for their purposes, taking it as a tool of purifying Marxism from its Hegelian metaphysical residue. See A I. Novikov, S S. Gusev, and A F. Zamaleev, eds., *Russkii Pozitivizm : Lesevich, Iushkevich, Bogdanov* [*Russian positivism: Lesevich, Iushkevich, Bogdanov*] (Sankt-Peterburg: "Nauka", 1995).

[109] Lenin, *Materialism and Empiriocriticism*, footnote 39.

[110] In Zurich, Lunacharskii became a part of "intellectually high milieu" of Russian radically-minded student body of Zurich University, among whom were future prominent revolutionaries, such as Vladimir Bonch-Bruevich. Anatolii Lunacharskii, "Vospominania iz revolutsionnogo proshlogo" ["Recollections from a revolutionary past"] (1919), *Nasledie A. V. Lunacharskogo* [*The Legacy of A. V. Lunacharskii*]. Web. 4.19.2014. <https://sites.google.com/site/lunacharskyfund/lib/vospominaniya-i-vpechatleniya/vospominania-iz-revolucionnogo-proslogo>.

the background... compared to the work with Avenarius."[111] The future creator of Soviet culture took both available seminars with the leader of empiriocriticism—one on philosophy and another on "bio-psychology," designed around Avenarius's newly published book *Kritik der reinen Erfahrung* (*The Critique of Pure Experience*, 1888-1890), a Russian resume of which Lunacharskii published in 1905.[112]

The influence of Bogdanov, Lunacharkii, Gorky and their co-thinkers on Soviet avant-garde art and aesthetics has been traditionally underestimated by scholars, wa overshadowed by Lenin's Orthodox Marxism. Moreover, the attempts of recent American scholarship to find affinities between Soviet "avant-garde" (first of all, Constructivist) aesthetics and Frankfurt school thinking have further obscured "the avant-garde's" indebtedness to empiriocriticist tradition, while associating empiriocriticsm with vulgar materialism.[113] Nevertheless, in the relatively pluralistic postrevolutionary atmosphere, in which cultural politics were officially delegated by Party leaders to their former rivals, empiriocriticist philosophical and aesthetic ideas was far from denigrated. Empiriocriticism, in fact, had been at the core of Soviet modernist architectural theory, which dates back to Expressionist group *Sinskul'ptarkh* (Synthesis of sculpture and architecture, 1919).[114] Both in its Cubist-Expressionist style and in the range of

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[111] Lunacharskii, "Vospominania iz revoliutsionnogo proshlogo."

[112] A. Lunacharskii, *R. Avenarius. Kritika chistogo opyta v populiarnom izlozhenii A. Lunacharskogo* [*R. Avenarius. Critique of pure experience in a popular account of A. Lunacharskii*] (Moskva: Izd. S. Dorovatovskago i A. Charushnikova, 1905).

[113] Even such thorough and insightful studies as those by Hays and Fore deny empriocriticism its role in modernist culture and radical thought. See Michael Hays, *Modernism and the Posthumanist subject: the Architecture of Hannes Meyer and Ludwig Hilberseimer* (Cambridge, Mass.: MIT Press, 1992); Devin Alden Fore, *'All the Graphs': Soviet and Weimar Documentary Between the Wars*. Diss., Columbia University, 2005.

[114] Shortly, after the inclusion of painters, it was renamed Zhivskul'ptarkh (Synthesis of] painting, sculpture and architecture, 1919-1920). The group included, among others, Cubist Sculptor Boris Korolev, the future

problems discussed within the group, Zhivskul'ptarkh presented a remarkable parallel to Berlin Arbeitsrat für Kunst (1918-1921), sharing the latter's fantastical mysticism. It was within the Zhivskul'ptarkh heated discussions about the specificity of arts that Ladovskii suggested a psychological definition of architecture through space: "Architecture is an art that operates with space. Sculpture is an art that operates with form. For example, a painterly decoration of walls will essentially remain a painting unless it helps to feel space, in which case it should be considered architecture"—a definition immediately corrected by Korolev as a misunderstanding of the analytical method: "One has to proceed from the elements on which this or that art is based; space, however, is not an element but a general notion."[115]

Expressionist mysticism and Cubist style were soon abandoned by Soviet artists, who continued to elaborate empiriocriticist ideas within a different institution, the Institute of Artistic Culture [*Institut khudozhestvennoi kul'tury*], usually abbreviated to INKhUK. Created in March of 1920, INKhUK was presided over by Wassily Kandinsky, who successfully encouraged a study of the psychological effects of art upon the beholder, but whose extreme subjectivism soon provoked a rebellion of his more materialist-minded colleagues. Led by Rodchenko, in November 1920, they established the Working Group of Objective Analysis within INKhUK. Two architects, Nikolai Ladovskii and Vladimir Krinskii, joined this objectivist group a month

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Constructivist Aleksandr Rodchenko, and the future Rationalists Ladovskii, Nikolai Dokuchaev, Georgii Mapu and Vladimir Krinskii.

[115] Russian original of Ladovskii's words: "Архитектура—искусство, оперирующее пространством. Скульптура—искусство, оперирующее формой. Например, убранство стен раскраской по существу будет живописью, но если оно так расположено, что помогает почувствовать пространство, оно является средством архитектуры." Russian original of Korolev's words: "нужно исходить из тех элементов, на которых основано то или иное искусство, пространство же есть общее понятие, а не элемент искусства." "The minutes of the sixth meeting of the Commission of the development of problems of architectural-sculptural synthesis (Sinskul'ptarkh)." Khan-Magomedov, *Ratsionalism*, 65.

after it was created and a year before the creation of VKhUTEMAS—just in time to take part in the famous discussion on construction and composition.[116] The group's makes an unambiguous reference reference to "the method of science—the method of analysis."[117] Juxtaposed with "synthesis" in the artistic discourse of the time, the word "analysis" also signified an objective, scientific approach associated with the new, modernist vision of art. Unlike the traditionalists' approach, which treated art as a technical skill and an artist's talent—as a divine gift, the modernists' "analysis" aspired to create a science of art, to dissect art in order to reveal its objective laws.[118] In the early days of Rationalism, Ladovskii foresaw an "illustrated dictionary, which meticulously establishes the terminology and definitions of architecture as a form of art, architecture's separate properties, qualities, and so forth, and the relationships between architecture and other arts."[119] Although this dictionary (which within architecture reflected an ambition analogous to that of the communist encyclopedia contemplated by Bogdanov and his co-thinkers on Capri for Soviet revolution) never materialized, its echoes could be heard in the VKhUTEMAS pedagogical programs, which approached architecture from the point of view of its formal "elements," aspiring to create a system of these elements and the laws of their

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[116] Hailed by Western historians as the birthplace of Soviet avant-garde, the discussion, indeed, allowed to formulate many ideas that later defined artistic and architectural Constructivism. See Maria Gough, *The Artist as Producer: Russian Constructivism in Revolution* (Berkeley: University of California Press, 2005).

[117] Russian original: «Наиболее целесообразным методом для изучения архитектуры… следует признать метод точных наук—метод анализа». Nikolai Dokuchaev, "Poiasnitel'naia zapiska k kursu 'iskusstvo arkhitektury' dlia khudozhestvennykh tekhnikumov" ["Explanatory note to the course 'The Art of Architecture' for art professional schools"], *Sbornik materialov po khudozhestvennomy obrazovaniu* [*Collection of materials on artistic education*] (Moskva: Gos. Izd., 1927) 79-81 (79).

[118] Lunacharskii used the words "analytic" and "synthetic" in this sense in order to reconcile "the futurists" and the "realists" at VKhUTEMAS. See Introduction to this dissertation.

[119] "Protokol zasedania rabochei gruppy arkhitektorov INKhUKa" ["Minutes of a meeting of the Working group of architects at INKhUK"], 26 March 1921, Khan-Magomedov, *Ratsionalizm,* 108.

composition.[120] Their "psycho-analytical" (or sometimes simply "analytical") pedagogical method was defined as "a segregated and consecutive (according to complexity) study of the formal regularities of artistic forms, their elements and qualities on the basis of the physiology of perception."[121] Whereas "synthetic" courses at VKhUTEMAS offered a practical approach to the development of artistic skill (painting, sculpting or designing under the guidance of a master), the "analytic" cycle gave students a theoretical knowledge of the psychology of visual perception. These analytic, so-called propaedeutic (offered at the beginning of students' education), courses were based on connecting each artistic discipline with a formal element dominant for that art: "Color" (developed by Constructivists Liubov' Popova and Aleksandr Vesnin) served an introduction to painting, "Volume" (developed by Cubist sculptor Boris Korolev)—to sculpture, "Space" (developed by Ladovskii)—to architecture, and "Drawing" (that is, line)—as an introduction to graphic design.

The discussion on construction and composition exposed the differences within the Working Group of Objective Analysis, and even before it was officially finished in April 1921, various factions within the Group became institutionalized as separate working groups: those of Constructivists, Objectivists, Sculptors, and Architects (the latter including Ladovskii and his architect-colleague Vladimir Krinskii). [122] The Working Group of Architects, the first meeting of

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[120] A similar dictionary of artistic terms had, however, been composed by GAKhN, Gosudarstvennaia Akademia Khudozhestvennykh Nauk (The State Academy of Artistic Sciences), which also based its research methodology on psychophysiological aesthetics. The dictionary remained unpublished until recently. See *Slovar' khudozhestvennykh terminov* [*Dictionary of Art Terminology*] (1923-1929) (Moskva: Logos-Al'tera, Ecce Homo, 2005).

[121] Nikolai Dokuchaev, "Arkhitekturnyi fakul'tet VKhUTEMASa" ["Architecture Department of VKhUTEMAS], *Arkhitektura. Raboty arkhitekturnogo fakul'teta VKhUTEMAS* [*Architecture. Works of Architecture Department of VKhUTEMAS*] (Moskva: Izd. VKhUTEMASa, 1927) V-XIV (VIII).

[122] The minutes of the meetings make clear Ladovskii's autocratic role as the founder of the new architectural theory: the discussions were rather Socratic conversations of the master with his disciples than genuine collegial

which took place on 26 March 1921, was actively meeting for approximately a year, until INKhUK became monopolized by the Constructivists and the Productivists, and working groups started to lose their autonomy.[123] The preserved minutes of the Working Group's meetings document the first, most productive, year of its work: aspiring to elaborate new directions for architecture, the Group sought an application of psychophysiological aesthetics and scientific positivism, discussing the writings of Hermann Muthesius and Heinrich Wölfflin alongside those of a British empiriocriticist Karl Pearson and, of course, Mach.[124]

An empiriocriticist agenda based on Mach's picture of reality was codified in the Program of the Working Group of Architects—the earliest document of Rationalism, accepted on 7 April 1921—which represented a synthesis of psychophysiological aesthetics and empiriocriticist epistemology. It postulated that the goal of the group was to perform an "analysis and synthesis" of the elements of architecture as expressive tools—i.e. as the means of producing subjective sensations. Space, form and construction were taken as the three key (nuclear, in Mach's terminology) elements of architecture, while the seven secondary (but not accidental) elements were mass, weight, volume, color, proportions, movement, and rhythm. Introduced into the Machian landscape of subjectively perceived qualities, the psychophysiological notion of

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debates. Most likely, it was Ladovskii who determined the topics of the meetings and suggested readings to the presenters. Petrov's talk, for example, was used by Ladovskii as the introduction to an explanation of empathy theory, while the discussion of Muthesius's text became an occasion to introduce the ideas of the leading empiriocriticist Austrian physicist Ernst Mach.

[123] Khan-Magomedov, *Ratsionalizm*, 127.

[124] Vladimir Krinskii, "Otchet o teoreticheskoi rabote gruppy arkhitektorov IKhUK" ["Report on the theoretical work of the Group of architects at INKhUK"], Khan-Magomedov, *Ratsionalizm*, 126-127.

space became the most important element of architecture, and an investigation of spatial properties was declared the first priority of the group.[125]

In the absence of objects that previously served as the basic structural units of architectural language ("a wall, a roof, a column, a beam, a plinth, a pediment, etc." Ladovskii described a list of such elements), the new architectural theory, for the architect, was to be comprised of perceivable spatial qualities in the same way that Mach's epistemology imagined the internalized universe as a set of elements of perception.[126] Just as Mach suggested going from sensations to bodies rather than from bodies to sensations,[127] Ladovskii insisted on defining architectural elements first and only then, based on these definitions, developing a new notion of architecture: "from a study of separate properties and qualities of a phenomenon—to building on these foundations conclusions and definitions of the phenomenon itself."[128] These qualities—the formal, subjective properties of spatial perception—in turn, comprised the essence of architecture and the object of architectural creativity. As Ladovksii's colleague and associate Nikolai Dokuchaev observed, the formal task of architecture consisted in designing architectural form in such a way, "that it is independently of the situation perceived as a form of a certain

[125] "Protokol zasedania rabochei gruppy arkhitektorov INKhUKa," 26 March 1921, 108-109.

[126] "Protokol zasedania programmnoi komissii rabochei gruppy arkhitektorov INKhUKa" ["Minutes of the meeting of Program Commission of the Working Group of Architects at INKhUK"], Khan-Magomedov, *Ratsionalizm,* 108-109.

[127] Mach claimed that "Bodies do not produce sensations, but complexes of sensation (complexes of elements) make up bodies." Ernst Mach, *Contributions to the analysis of the sensations (*Chicago: The Open Court Publishing Company, 1897) 22.

[128] "Protokol zasedania rabochei gruppy arkhitektorov INKhUKa," 26 March 1926, 108.

quality, which is given to it by the author"—the goal of architectural work, in other words, was to design not the form, but its psychological correlate (i.e. the subjectivity of the viewer).[129]

The absence of a thing and an absence of a boundary between a thing and the "I," was, for Ladovskii, the key lesson of Mach's epistemology. Opposing Mach to Kant (most likely, to dissociate empiriocriticism from the idealism of the latter), Ladovskii argued against the mysticism of the unknowable object in such a way that the thing-in-itself assumed the qualities of Marx's matter—a category whose preterition eloquently testified to its incompatibility with Mach's (and Ladovskii's) philosophical system. Meanwhile, the subject, dissolved in the world of psychological sensations and merged with an object, was not only demystified—it became analyzable and constructable. In the end, it was this ultimate constructability of the subject that attracted Ladovskii to Mach's teachings and that made empiriocriticism a useful tool for Ladovskii's major tasks—namely developing a new architectural theory in post-revolutionary Russia and teaching architecture at VKhUTEMAS/VKhUTEIN.

The result of Mach's "radical doubt" about the existence of material world was its reduction to subjective sensations of physical properties: colors, sounds, temperatures, times, and spaces. Since every physical quality (or element, in Mach's terminology) existed in mind as a sensation, the old dualism of spirit and matter was overcome, explained away as a mere linguistic misunderstanding. The mosaics of elements/sensations that the world presented was not chaotic, but rather organized into complexes, which, although never absolutely stable,

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[129] Translation by the author. Dokuchaev's emphasis. Russian original: «Научиться... так оформлять [архитектурную форму], чтобы она во всех случаях воспринималась зрителем, как форма определенного **качества**, данного ей автором». Nikolai Dokuchaev, ""Poiasnitel'naia zapiska k kursu 'iskusstvo arkhitektury' dlia khudozhestvennykh tekhnikumov" ["Explanatory note to the course 'The Art of Architecture' for art professional schools"], *Sbornik materialov po khudozhestvennomy obrazovaniu* [*Collection of materials on art education*] (Moskva: Gos. Izd., 1927).

demonstrated a certain permanency. For the sake of ease in our orientation in the world, these relatively stable complexes of sensations, connected in time and space, were called bodies. As a result, concluded Mach, it was not bodies that produced sensations but, on the contrary, complexes of sensations (or elements) that made up bodies.[130]

No single body was absolutely stable in Mach's worldview: "My friend may put on a different coat. His countenance may assume a serious or a cheerful expression. His complexion, under the effects of light or emotion, may change. His shape may be altered by motion, or be definitely changed." Nevertheless, "It is the same friend with whom I take my daily walk"—we recognize a complex of sensations as our friend on the basis of permanent qualities, which outnumber transitory ones.[131] In other words, Mach saw a body as a combination of stable nucleus qualities (which he also called permanent facts) and unstable, "annexed," accidental ones.[132] The "I," for Mach, was also only a relatively permanent combination of qualities, a "complex of memories, moods, and feelings, joined to a particular body (the human body)."[133] This postulation of the ultimate instability of the ego led Mach to such philosophical findings as the impossibility of death, but most importantly, it allowed him to argue for a principal inseparability between the "I" and the world. This idea was most vividly illustrated by Mach's drawing that showed how closing one eye changed the perceived vision of the world, forcefully merging the body with it. The picture of external reality seen by Mach was now framed with his

[130] Mach, *Contributions to the analysis of the sensations*, 22.

[131] Mach, *Contributions to the analysis of the sensations*, 2-3.

[132] Mach, *Contributions to the analysis of the sensations,* 10.

[133] Mach, *Contributions to the analysis of the sensations,* 3.

Fig. 2.1. Mach's illustration to *The Analysis of Sensations*, showing the merging of the Ego and the world.

own moustache, his nose and his eyebrow, while his legs and hands were perceived as seamless part of the environment. Mach wrote:

> I find myself surrounded by moveable bodies in space, some inanimate, others plants, animals and men. My body, likewise moveable in space, is for me a visible and touchable object of sense perception occupying a part of sensible space alongside and outside other bodies, just as they do. My body differs from those of other people in certain individual features but above all in that when objects touch my body peculiar feelings supervene that I do not observe when other bodies are touched. My body is not quite as accessible to my eyes as the bodies of others. I can see only a small part of my head, at least directly. In general my body appears to me under a perspective quite different from that of all others: towards them I cannot take up that optical point of view. [134]

Ladovskii was open about his indebtedness to Mach. The most valuable part of Mach's theory for him was its rejection of the notion of an object and its replacement with a vision of more or less loosely connected complexes of elements. On 12 May 1920, during a discussion of the laws of mechanics in architecture within the Working Group of Architects, the leader of Rationalism presented empiriocriticism to his colleagues, effectively reducing it to this idea:

> I will introduce you to the opinion of Mach, to his argumentation. You have drawn a construction and you argue that this is architecture. Let us take a clock: it too has a construction, but this does not make it architecture. We have, therefore, to start with establishing scientific terms.
>
> Mach says: "Objects do not exist in the world." Earlier, some theoreticians and philosophers told us that an object exists, while others claimed that only our perceptions are real. Both arguments, as it seemed, were correct, and no one could recognize a

[134] Ernst Mach, *Knowledge and Error: Sketches on the Psychology of Enquiry* (Dordrecht and Boston: D. Reidel Pub. Co., 1976) 4.

> mistake in the assumptions. There is no difference between you and a thing… "I" can be infinitely extended. Existent are your body, mind, clock. A body is connected to a thing—through an eye and the brain. I say about an eye "this is me." But I can also say "the clock is also me." There is no boundary between myself and the external world. I can connect myself to the globe. There is no boundary, but there is a link that is convenient to confine oneself to.
>
> What is an object? Earlier [people] thought about the object itself and its properties as an object. This led philosophers to mistakes. Think only of Kant's useless attempts to give corresponding notions. Mach is attempting to remove this strange error. He determines that "only complexes of elements exist." They are changeable, but connected in time. And those whose connection is more stable—these are the ones we talk about. Here is a dress. We could have said now that it is a complex of certain forces. But this would be inconvenient, because there are more stable and more temporal values; the latter do not give it a definite character. Thus Mach says: only changeable complexes of qualities temporally exist, while there are no things in themselves.[135]

This epistemological reduction of bodies to elements of perception and their qualities allowed Ladovskii to follow his program of using architecture to reorganize human subjectivity. Moreover, Ladovskii's program of the development of a new Soviet subject—the major preoccupation of all post-revolutionary thinkers and cultural bureaucrats—was also indebted to empiriocriticism: if the vision of perceived physical reality was based on the writings of Mach, the purpose, character, and structure of the new subject were conceived by Ladovskii under the

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[135] Khan-Magomedov, *Ratsionalizm*, 119. Translation by the author. Russian original: "Мах говорит: «Предметов не существует в мире». Тогда нам теоретики, философы говорили: одни—что предмет существует, другие утверждали, что существуют лишь наши ощущения. Оба утверждения, казалось, были правы, и нельзя было распознать ошибок в посылках. Разницы между вами и вещью нет… Вытянуть Я можно до бесконечности. Существует ваше тело, сознание, часы. Между телом и есть связь с вещью—через глаз и мозг. Я говорю о глазе: «это я». Но я могу сказать: «и часы это я». Между мною и внешним миром нет границы. Я могу себя связать с земным шаром и т.д. Границы не существует, но есть связь, которой удобно ограничиться.

Что есть предмет? Раньше разумели сам предмет и его свойства вещи. Благодаря этому философы пребывали в заблуждении. Вспомните только бесполезные усилия Канта дать соответствующие понятия. Это странное заблуждение пытается устранить Мах. Он устанавливает, что «существуют только комплексы качеств». Они переменны, но связаны во времени. И те, у которых взаимная связь более продолжительна,--о тех мы и говорим. Вот платье. Мы могли бы теперь сказать, что это комплекс таких-то сил. Но это было бы неудобно, так как здесь есть величины более постоянные, другие—временные; последние не дают ему определенного характера. Мах и говорит: существуют во времени только переменные комплексы качеств, а вещей в себе никаких не существует."

impact of teachings of Mach's philosopher-colleague Richard Avenarius. In accordance with Avenarius's viewpoint, with contemporary aesthetic theories, and with the values and principles of early-Soviet culture, the new subject, most of all, was to become efficient and economical in his or her every function. For architecture, Ladovskii believed, this meant an economy of mental energy expended in the process of perceiving architectural form.

Psychological Aesthetics and the Economy of Mental Energy

The similarity of the Rationalist method's name, "analytical," or "psycho-analytical" method, with the Freudian school of psychology was hardly unknown to Ladovskii, who keenly followed contemporary psychological publications. Nevertheless, Ladovskii's method had little to do with a Freudian analysis of sexuality. Instead, I would argue, the name was a deliberate reference to the psychological theory that was associated first and foremost with the notion of the unconscious—a notion at the core of Ladovskii's theory of architectural perception.[136] Indeed, the writings and theories of Sigmund Freud were known in Russia before the revolution and did not disappear after. Several key works of Freud were published in Russian in the 1910s and 1920s.[137] The revolution led not to an oblivion, but to a revival of Freudian enthusiasm in Russia

[136] For an example of dismissing the connection between Ladovskii's "psychoanalytical method" and Freud's psychoanalysis, see: Andrei Velikanov, *Simuliiakr li ia drozhashchiĭ ili pravo imeiu* [*Am I a shivering simulacrum or do I have a right*] (Moskva: Novoe literaturnoe obozrenie, 2007); Aleksandr Rappoport, "Paradoksy Ladovskogo" ["Ladovskii's paradoxes"], *Prostranstvo VKhUTEMAS: nasledie, traditsii, novatsii* [*VKhUTEMAS Space: Legacy, Traditions, Innovations*] (Moskva: MARHI, 2010); Margarete Vöhringer, *Avantgarde Und Psychotechnik: Wissenschaft, Kunst Und Technik Der Wahrnehmungsexperimente in Der Frühen Sowjetunion* (Göttingen: Wallstein, 2007) 49. Most other scholars have been avoiding the question of the name of Ladovskii's pedagogical method.

[137] Among the translations were: *Snotolkovanie* (*Traumdeutung*, 1900), 1911; *Totem i Tabu (Totem und Tabu: Einige Übereinstimmungen im Seelenleben der Wilden und der Neurotiker*, 1913), 1923; *Osnovnye*

in the mid-1920s, when it was reinterpreted as cognate to physiology and Marxism. Revolutionary Karl Radek supported psychoanalysis in one of his "Pravda" articles in 1923,[138] while in *Literature and Revolution* (1924) Leon Trotsky mentioned that, in his opinion, psychoanalysis "can be reconciled with materialism."[139] Although fruitful, this revival was short-lived: the Russian Psychoanalytical Society, for example, was created in 1922 and disbanded in 1930, the dates of its existence coinciding with the period in which\ psychoanalysis was tolerated by authorities and popular among psychologists.

In the 1920s, a series of publications in academic and party journals undertook the task of reconciling psychoanalysis with Marxism. It started with a 1923 article by Bernard Bykhovskii "On the Methodological Foundations of Freud's Psychoanalytic Theory," published in a journal of the Communist Academy, the major intellectual think-tank of the Soviet power. According to

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psikhologicheskie teorii v psikhoanalize, 1923; Ocherki *po psikhologii seksual'nosti* (*Drei Abhandlungen der Sexualtheorie,* 1905), 1924; *Psikhopatologia obydennoi zhizni* (*Psychopatologie des Alltagslebens*, 1901), 1925; *Ostrota* (*Der Witz und seine Beziehung zum Unbewußten*, 1905), 1925; *Po tu storonu printsipa udovol'stvia (Jenseits des Lustprinzips,* 1920), 1925; a book on Freud, F. Vittel's, *Freid. Ego lichnost', uchenie i shkola*, was published in 1925.

[138] Aron Zalkind, "Freidizm i marksizm. Marksizm i psikhologia" ["Freudianism and Marxism. Marxism and psychology], *Freid, Psikhoanaliz i Russkaia Mysl'* [*Freud, Psychoanalysis and Russian Thought*] (Moskva: Respublika, 1994) 145-167 (145).

[139] Leon Trotsky, *Literature and Revolution*, Ann Arbor: U of Michigan Press, 1960, 220. Russian original: "Но что сказать по поводу психоаналитической теории Фрейда? Примирима ли она с материализмом, как думает, например, т. Радек (и я вместе с ним), или же враждебна ему?" Two years later, Trotzky argued developed his thought: "It would be too simple and crude to declare psycho-analysis as incompatible with Marxism and to turn one's back to it. In any case, we are not obliged to adopt Freudianism either. It is a working hypothesis. It can produce, and it does produce deductions and surmises which point to a materialist psychology. In due time, experimentation will provide the tests. Meanwhile, we have neither reason nor right to declare a ban on a method which, even though it may be less reliable, tries to anticipate results towards which the experimental method advances only very slowly." Quoted in Isaac Deutscher, *The Prophet Unarmed: Trotsky, 1921-1929* (New York: Random House, 1959) 180. For the original, see L. Trotsky, *Sochinenia* (Moscow-Leningrad: Gosizdat, 1927), 430-431. See alsom Alexander Etkind, *The Eros of the Impossible. The History of Psychoanalysis In Russia* (Boulder, Colorado: Westview Press, 1997); Martin A. Miller *Freud and the Bolsheviks: Psychoanalysis in Imperial Russia and the Soviet Union* (New Haven: Yale University Press, 1998) 87.

Bykhovskii, the core of Freud's teaching lay in his concept of the unconscious, which was fully compatible with both Marxism and materialist psychology:

> When you learn psychoanalysis better, you not only become convinced in its compatibility with reactology,[140] but also start doubting its subjectivism. Subjectivism seems to be a shell that obscures the essence. Indeed, psychoanalysis [is] a study of the unconscious, of something that happens **beyond** the subjective "I." The unconscious really impacts human reactions, frequently orchestrating them. The unconscious cannot be studied through cognition, subjectively. This is the reason why Freud studies **objective manifestations** of the unconscious (symptom, mistake, etc.), seeking for the conditions of minimal participation of reason (dream, childhood). All this is undoubtedly admissible for reactology.[141]

Similarly, in his early article "Psychoanalysis as a system of monist psychology" (1925), Aleksandr Luria (who was soon to become prominent Soviet neuropsychologist) viewed psychoanalysis as a paradigm with allows to view personality in its entirety, as a unity of biological and cognitive stimuli: "Psychoanalysis abruptly ends with metaphysics and idealism of old psychology and lays (with the doctrine of reactions and reflexes of man) a solid foundation of psychology of materialist monism, positively approaching the psyche of integral

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[140] Reactology—psychological approach developed in Russia by Konstantin Kornilov (1879-1957) as a synthesis of subjective psychology, physiology, and Marxism. It explored the notion of reaction, which was developed as an expansion and development of that of reflex; the method of reactology consisted in measuring speed, strength and form of reactions. In the 1930s, reactology was criticized and eventually dismantled (alongside other Soviet psychological schools, such as reflexology, psychoanalysis, psychotechnics, pedology).

[141] B. Bykhovskii, "O metodologicheskikh osnovaniiakh psikhoanaliticheskogo uchenia Freida" ["On the methodological foundations of the psychoanalytical teaching of Freud"], *Pod znamenem Marksizma* [*Under the Banner of Marxism*] No. 11-12 (1923): 158-177. Bykhovskii's emphasis. Translation by the author. Russian original: «Когда ближе знакомишься с психоанализом, не только убеждаешься в его согласуемости с реактологией, но и начинаешь сомневаться в его субъективизме. Субъективизм кажется затемняющей суть дела оболочкой. В самом деле, психоанализ—учение о бессознательном, о чем-то, происходящем **вне пределов** субъективного «я». Бессознательное реально воздействует на реакции организма, часто руководя ими. Бессознательное не может быть изучаемо через сознание, субъективно. Это и служит причиной того, что Фрейд изучает **объективные проявления** бессознательного (симптом, ошибка и т.д.), ищет условия минимального участия сознания (сон, детский возраст). Все это безусловно приемлимо для реактологии».

personality."[142] Bridging the conscious and the unconscious, psychoanalysis, according to Luria, created a monist system of the kind advocated by Bogdanov.

Leaving aside question of correctness of these representations of psychoanalysis, it is important to notice that the sexual component of Freudianism was consistently downplayed by its Soviet adepts, who identified psychoanalysis with a positive study of the unconscious. Thus, in his thorough study of psychoanalysis Valentin Voloshinov (sometimes identified as Mikhail Bakhtin writing under his colleague's name) summarized its essence as a tripartite statement: consciousness does not always have access to the true motives of human actions; actions can be defined by unconscious psychological forces; these psychological forces can be brought to consciousness with the help of special techniques.[143]

By removing the unconscious from the domain of subjectivity, which was tied to rationality and cognition, Bykhovskii connected it with the collective and the trans-individual, understood as the instinctive, that is, in an evolutionist biological sense as belonging to species. This unconscious was not opposed to consciousness, but rather presented consciousness's super-individual form, which enabled the coordination of individuals' efforts in the interest of the

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[142] Aleksandr Luria, "Psikhoanaliz kak sistema monisticheskoi psikhologii," *Zigmund Freid, psikhoanaliz i russkaia mysl'*. Sostavitel' V. M. Leibin. Moskva: Respublika, 1994, 168-194 (193-194). Translation by the author. Original text: «Психоанализ, перенося учение о психических явлениях в совершенно иную плоскость учения об органических процессах, происходящих в цельном человеческом организме, резко порывает с метафизикой и идеализмом старой психологии и закладывает (вместе с учением о реакциях и рефлексах человека) твердых фундамент психологии материалистического монизма, позитивно подходящей к психике цельной личности».

[143] Mikhail Bakhtin (pod maskoj) [(under a mask)], *Freidizm. Formal'nyi metod v literaturovedenii. Marksizm i filosofia iazyka. Stat'I* [*Freudianism. Formal Method in Literature Studies. Marxism and the Philosophy of Language*] (Moskva: Labirint, 2000) 117. Russian original: «1) мотивация сознания при всей ее субъективной искренности не всегда соответствует действительным причинам поступка; 2) поступок иногда может определяться силами, действующими в психике, но не доходящими до сознания; 3) эти психические силы с помощью известных приемов могут быть доведены до сознания».

group. Highly popular in Russia, Eduard von Hartmann also used this notion as the major philosophical principle in his *Philosophy of the Unconscious* (*Philosophie des Unbewussten*, 1869, translated into Russian in 1873-75). Represented by instincts (such as gregarious instinct or the instinct of procreation), the unconscious for Hartmann allowed the species to survive and to develop towards a common goal, providing evolution with a teleological, guiding channel. This understanding of instinct was similar to its later interpretation by Freud in "Drives [Instincts] and their Vicissitudes" ("Triebe und Triebschicksale," 1915), in which he grouped the entire multiplicity of drives between "Eros" (the life instinct) and "Thanatos" (the death instinct): purely biological in nature, these drives, according to Freud, existed in the psyche of every human independently of his or her personal history as the deepest biological structures acquired in the course of evolution.[144]

Apart from neo-Darwinism, both Hartmann and Freud were influenced by the newest developments in physics, such as thermodynamics, whose "first law" declared that the amount of energy possessed by a system always remained a constant: energy could be transformed, but neither created nore destroyed. From physics, the notion of energy quickly spread to other disciplines, being applied, for instance, to an understanding of human personality. As a student of physicist and physiologist Ernst Brücke, who was credited with the invention of "psychodynamics," Freud made the notion of libido—sexual energy—the basis of his psychoanalysis. Libido resided in the unconscious and always strove for release, often finding its way out in self-destructive neuroses and hysterias, or in sublimation, which enabled art and other

[144] Sigmund Freud, „Triebe und Triebschicksale" (1915), *Internationale Zeitschrift für (ärztliche) Psychoanalyse*, III, 84-100; „Instincts and their vicissitudes," *The Standard Edition of the Complete Works of Sigmund Freud,* 24 Vols., ed. James Strachey et al., Vol. 14 (London: The Hogart Press and the Institute of Psychoanalysis, 1953-1974) 117-140.

forms of creative and productive work; it could also be artificially released in the course of psychoanalytic sessions.

While the notion of the human as a repository of energy remained widely accepted, its sexual interpretation by Freud found few supporters at the turn of the twentieth century. More commonly, this energy was seen as a vital one, necessary for maintaining life in the individual body and in the collective. Possessing no destructive potential, this vital energy could be transformed into creative energy, which contributed to the life of the species as a whole; thus, rather than being released, it had to be economized. In his *Philosophy as Thinking about the World According to the Principle of the Smallest Measure of Force* (*Philosophie als Denken der Welt gemäß dem Prinzip des kleinsten Kraftmaßes* of 1876, translated into Russian in 1913), Avenarius argued that philosophy helped the adaptive process by creating more logical and efficient (economical) thinking by summarizing particular ideas into general notions and determining relationships between the latter: "This striving to think the totality of objects in the most energy-saving way, that is, under one notion, and therefore to allow for a comprehension of all particular things, is [called] philosophy."[145] General notions economized energy since they were based on the principles of association and habit [*Gewohnheit*], both of which displaced perception into the domain of the unconscious. For Avenarius, habit was the major strategy for economizing perceptive energy, and was closely connected with the emotion of pleasure, the familiar assuring and the unfamiliar bringing discomforting feelings. Avenarius wrote:

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[145] Richard H. L. Avenarius, *Philosophie Als Denken Der Welt Gema¨ß D em Prinzip Des Kleinsten Kraftmaßes: Prolegomena Zu Einer Kritik Der Reinen Erfahrung* (Leipzig: Fues's Verlag, 1876) 43. German original: „Dieses Sterben, die Gesamtheit der Gegenstände am kraftersparendsten d.h. unter einem allgemeinen Begriff zu denken, und somit ein Begreifen aller Einzeldinge zu ermöglichen, ist die Philosophie."

> If we face the opposite of the familiar, the unfamiliar, it will become clearer to us that the habit illustrates the tendency of the soul to economize energy. I hardly believe that everyone who thinks of the notion "unfamiliar" does not feel at least a slight shadow of displeasure; at any event, he feels this displeasure when he really must think of the unfamiliar [things]. To put it simply, [this happens] because [the idea of] the unfamiliar is an unfamiliar thought, i.e. a thought that exceeds familiar thoughts. Every notion that is not contained within the system of notions that [we have] already acquired, [which are] tightly connected among themselves, and to think of which we nevertheless must consider [them] through some relationships—be it a discovery, a conversation, or a new book or something else—clearly makes our soul to experience fear or hostility at the necessity of thinking about the new alongside the old. Such a thought, such a notion is "uncomfortable" for us and we react at it with displeasure... [146]

Introducing the notion of the unfamiliar, Avenarius situated it within an already established physiological discourse, in which the concept of energy, applied to perceptive capacities of people, was transformed into the notion of attention. Attention, according to Jonathan Crary, appeared in the modern period as "a model of how a subject maintains a coherent and practical sense of the world,"[147] and which was (and remains) one of the foundational categories of modern culture. Because energy, consciousness and attention were fundamentally limited within the a body, thinkers as different as Adolf Loos and Georg Simmel (as well as Frankfurt school theoreticians) were concerned with the unnecessary dispersion of attention through wasted cognitive acts and that resulted in an inability to concentrate and to

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[146] Avenarius, *Philosophie als Denken der Welt...*, 8-9. German original: „Dass somit die Gewohnheit das Sterben der Seele nach Kraftersparniss illustrire, wird uns noch deutlicher, wenn wir den Gegensatz des Gewohnten, das Ungewohnte in's Auge fassen. Ich glaube kaum, dass Jemand die Vorstellung „Ungewohntes" denkt, ohne einen wenn auch noch so leisen Anklang von Unlust in sich zu fühlen; jedenfalls fühlte er diese Unlust, wenn er Ungewohntes wirklich denken soll. Einfach, weil Ungewohntes denken ein ungewohntes Denken, d.h. ein das Gewohnheitsmass überschreitendes Denken ist. Eine jede Vorstellung, welche nicht in dem System unserer bereits erworbenen, unter sich fest verbundenen Vorstellungen enthalten ist, und welche zu denken wir dennoch durch irgend welche Verhältnisse—sei es ein Entdeckung oder ein Gespräch oder ein neues Buch oder was immer—genötigt werden, lässt uns deutlich die Scheu oder Abneigung der Seele vor dem Ungewohnten empfinden, vor dem Zwang, neben dem Alten ein Neues zu denken. Ein solches Denken, eine solche Vorstellung ist uns „unbequem" und wir reagieren darauf mit Unlust..."

[147] Jonathan Crary, *Suspensions of Perception. Attention, Spectacle, and Modern Culture* (Cambridge, MA: The MIT Press, 2000) 4.

distinguish important from trifling; they considered this inability to be the result of excessive architectural ornamentation (Loos) or of the hectic life in a modern metropolis (Simmel).[148] Avenarius's *Prinzip des kleinsten Kraftmaßes* explored alternative, healthy, energy-saving, cognitive models, of which the *un*conscious, initially identified with the automatic, became the most important one.

In Russia, the concept of the economy of attention was explored by powerful Khar'kov linguistic school, which instilled psychology into literary analysis. Its founder, Aleksandr Potebnia (1835-1891), believed that the clue to understanding poetic language in the study of unconscious human cogitative processes.[149] Potebnia's follower, Dmitrii Ovsianiko-Kulikovskii (1853-1920) identified the waste of psychic energy with attention, or the employment of intellect. Automatism, or the unconscious, for him, was its opposite, allowing one to achieve results without spending energy.[150] Ovsianiko-Kulikovskii argued that human mental life was defined by a constant dialog between consciousness and the unconscious. Memory, for instance, was seen by the scholar as the storage of cognitive acquisitions in the unconscious sphere. Moreover, it was within the unconscious that the vast majority of cognitive acts took place as automatic activities, which the consciousness noticed only in their latest stages. In this ability of the unconscious to perform cognitive work tacitly Ovsianniko-Kulikovskii saw great potential

[148] For a comparison of their agendas, see Michael Hays, *Modernism and the Posthumanist Subject.*

[149] See Aleksandr Potebnia, *Iz zapisok po teorii slovesnosti* [*From the Notes on the Theory of Philology*] (Khar'kov: Parovaiā˜tip. i litografiiā˜M. Zil'berberg, 1905).

[150] Dmitrii Ovsianiko-Kulikovskii, *Voprosy psikhologii tvorchestva* (S.-Petergurg: D.E. Zhukovskii, 1902).

for a rationalization of thinking: "This means that all the work was gratuitous for us, and a great economizing of intellectual energy is obvious."[151]

This idea of the productive unconscious found support among the Bogdanovite leaders of the Proletkul't and the Narkompros, such as the worker literary critic Fedor Kalinin (1883-1920),[152] an alumnus of Bogdanov's Capri Party School, who underlined the creative potential of the unconscious in *Proletarskaia Kul'tura* [Proletarian Culture], the official Proletkul't periodical in 1918:

> The processes of scientific creativity are based on logical thinking and go under the control of knowledge, which is expressed in collecting material necessary for the task and assembling it into a logically purposeful chain. But this is not all. Our psyche is more than merely consciousness: [consciousness] forms only its light, immediately given area. Behind it is a vaster, darker side of psyche—the unconscious, the richest repository of experience, of numerous emotions, elusive in their feebleness and extreme commonness,--experiences vaguely perceived and forgotten. When consciousness finishes the job of accumulating and organizing material, then, if the discovery is ripe, the unconscious relieves it, connects with the conscious area, entering it in a mighty, fruitful stream, and from its hidden treasures contributes that which was needed for a solution to the task. ... Poincaré recalls how he made a mathematical discovery not in a moment of intense calculative work, but while sitting in a car, thinking of something completely different. At first sight, this seems to be an accidental discovery. But this is wrong. Here we can obviously admit only one assumption: when an intensive work of consciousness on the given topic stops, the work of the unconscious, which goes on in parallel, continues in its own direction, even if consciousness is distracted by completely different tasks.[153]

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[151] Dmitrii Ovsianiko-Kulikovskii, "Vvedenie v nenapisannuiu knigu po psikhologii umstvennogo tvorchestva (nauchno-filosofskogo i khudozhestvennogo" ["Introduction to an unwritten book on the psychology of intellectual creativity (scientific-philosophical and artistic)"], N. V. Os'makov, *Psikhologicheskoe napravleneie v russkom literaturovedenii* [*Psychological Trend in Russian Literature Studies*] (Moskva: Prosveschenie, 1981) 109-121 (111). Russian original: «Это значит, что вся эта работа обошлась нам даром, и тут нельзя не видеть огромного сбережения умственной силы».

[152] Fedor Ivanovich Kalinin (1882-1920) was an elder brother of the famous Stalinist functionary Mikhail Ivanovich Kalinin.

[153] Fedor Kalinin, "Proletariat i tvorchestvo" ["Proletariat and Creativity"], *Proletarskaia Kul'tura* [*Proletarian Culture*] No.1 (1918): 10. Translation by the author. Russian original: «Протекание процессов научного творчества основывается на логическом мышлении и идет под контролем сознания, который выражается в собирании для поставленной задачи необходимого материала и приведении его в логически целесообразную

Strictly physiological, the reading of the unconscious by Potebnia, Ovsianiko-Kulikovskii, Kalinin and the like not only made this notion popular in Russian nineteenth-century and early-Soviet culture; it informed the reception of Freud in Russia and contributed to a great, albeit short-lived, popularity of the founder of psycho-analysis.[154]

This displacement of spatial, and more specifically, architectural, perception into the domain of the unconscious was in an ostensible conflict with, probably, the most renowned strategy of Russian Formalism—estrangement, or defamiliarization [*ostranenie*], developed by Viktor Shklovskii around 1916. In "Art as Technique" Shklovskii directly attacked Avenarius and Spencer as well as Potebnia and Ovsianiko-Kulikovskii, constructing his energy-expensive literary technique as a direct opposite of theirs.[155] A precursor of Greenberg's notion of the

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связь. Но дело не сводится всецело к этому. Наша психика не исчерпывается сознанием: это—только ее светлая, непосредственно доступная нам область. За нею скрывается еще гораздо более обширная, темная сторона психики—подсознание, богатейший склад опыта, хранилище бесчисленных переживаний, неуловимых по своей слабости или крайней обычности,--переживаний смутно воспринятых и забытых. Когда сознание заканчивает работу накопления и упорядочивания, если открытие назрело, подсознательное приходит на помощь, вступает в связь с областью сознания, как бы врываясь в нее могучим, оплодотворяющим потоком, из своего скрытого богатства вносит то, чего не хватало для решения задачи. А в результате этого синтеза является как бы неожиданное открытие, нечто новое, способное дальнейшее развитие целой отрасли знания и мысли направить по новым путям, по новым методам. ... Пуанкаре рассказывает, как он сделал одно открытие в математике не в момент напряженной работы по вычислениям, а когда садился в автомобиль, думая совершенно о другом. На первый взгляд это кажется случайным открытием. Но это неверно. Здесь, очевидно, допустимо только одно предположение: когда напряженная работа сознания по данному вопросу прекращается, то работа подсознания, происходящая параллельно, продолжается и идет своим путем, хотя бы сознание отвлекли совсем другие задачи». See also Henri Poincaré, *Science and Method* (1914), multiple editions.

[154] Kalinin's argument about the creative role of the unconscious reminds of the Jugendstil's interest in the automatic and the unconscious, an interest fed by the popularity of occultism and the idea of artist as a medium. However, unlike the mystical idea of the unconscious as a locus of presence of a "second personality" promoted then, Kalinin's notion of the unconscious preserved the unity of ego. See Zeynep Çelik Alexander, "Kinaesthetic impulses: aesthetic experience, bodily knowledge, and pedagogical practices in Germany, 1871-1918." Diss., Massachusetts Institute of Technology, 2007, 95-140.

[155] Viktor Shklovskii, "Iskusstvo kak priem" ["Art as Technique"], *Sborniki po teorii poeticheskogo iazyka* [*Collections on the Theory of Poetic Language*], Vyp. 2 (Petrograd, 1917) 3-14. English translation of the essay can be found in numerous editions.

avant-garde as an intellectual challenge, estrangement, at first sight, condemned the theories of unconscious intellectual activity as regressive and, ultimately, anti-modernist. But although the principle of economizing energy can, indeed, be easily dismissed as developing a lazy, non-thinking—in other words, a totalitarian—subject, the dialectical pair of modernist Russian-German literary theory "economy of energy/estrangement" should not be interpreted as a binary opposition or disintegrated in order to condemn the former principle for the sake of redeeming the latter.[156] In fact, the notion of unconscious intellectual activity was far from discouraging intellectual work and exploration: on the contrary, Avenarius took the waste of energy that thinking entailed as an unavoidable evil, having devoted his career to understanding cognitive process, while subsequent proponents of "unconscious" thinking also considered it to be serious work that doubled rather than canceled conscious thinking.[157]

In the domain of aesthetic thought, the ideas of the economy of energy were, most importantly, explored by German sculptor and thinker Adolf von Hildebrand, who applied empiriocriticist epistemology to formalist aesthetics, and whose major theoretical work, an essay *Das Problem der Form in der bildenden Kunst* (1893), was translated into French, English and

[156] Such well-intended rehabilitations of modernist aesthetic theory have recently prompted contradictory interpretations of their original programs. For instance, Juliet Koss, discussing the aesthetic theory of Adolf Hildebrand claims that in relief sculpture "The power of an aesthetic impression was thus based on the intensity of the energy the spectator expended"—in spite of Hildebrand's own claim that "any device that requires special attention or special examination is ineffective." Juliet Koss, *Modernism after Wagner* (Minneapolis: University of Minnesota Press, 2010), 178; Adolf Hildebrand, "The Problem of Form in the Fine Arts," *Empathy, Form, and Space: Problems in German Aesthetics, 1873-1893*, Intr. and transl. Harry Francis Mallgrave and Eleftherios Ikonomou (Santa Monica, CA: Getty Center for the History of Art and the Humanities, 1994) 227-280 (245).

[157] Moreover, even the ethical assessments of the two aesthetic strategies can easily be reversed: it can be argued, for example, that the energy-wasting imperative of Shklovskii's defamiliarization asserted art's higher, mystical and quasi-religious status, which ultimately gave no fewer possibilities for ideological manipulation.

Russian and was often cited by the Rationalists.[158] Similarly to Avenarius and Ovsianiko-Kulikovskii, Hildebrand was convinced in the unhealthiness of dispersing attention as a waste of perceptive energy; a good work of art, for him, allowed assessing its formal idea at a glance.[159] The job of an artist, accordin to Hildebrand, consisted in separating the essential from the accidental (as Mach might have put it, the core from peripheral qualities) and emphasizing the former: "When children draw a face as a circle with two dots for eyes, a vertical line for a nose, and a horizontal line for a mouth, they present just this necessary effect, as a wholly adequate image of our natural idea of effective form."[160] 'Effective form' [*Wirkungsform*] was the phenomenal representation of an object, and was "always a joint product of the object, on the one hand, and of its lightning, surroundings, and our changing vantage point, on the other."[161] The contrary, ontological inherent form [*Daseinsform*] depended solely on the object and not on its changing appearance, and could only be abstracted from effective form. An artist, for Hildebrand, operated solely with effective form, exploring the laws of its formation and thus creating not objects, but their phenomenal impressions. The architects of Renaissance Genoa, for

[158] Adolf von Hildebrand, *Le probleme de la forme* (Strassburg, Heitz, 1893); Adolf von Hildebrand, *The Problem of Form in Painting and Sculpture*, transl. Max Meyer and Robert Morris Ogden (New York: G. E. Stechert & co., 1907); A. Gildebrand, *Problema formy v izobrazitel'nom iskusstve* [*The Problem of Form in the Fine Arts*], transl. N. B Rozenfel'd and V. A. Favorskii (Moskva: Musaget, 1914).

[159] Adolf Hildebrand, "The Problem of Form in the Fine Arts," *Empathy, Form, and Space: Problems in German Aesthetics, 1873-1893*, introd. and transl. Harry Francis Mallgrave and Eleftherios Ikonomou (Santa Monica, CA: Getty Center for the History of Art and the Humanities, 1994) 227-280 (245).

[160] Hildebrand, "The Problem of Form in the Fine Arts," 235. A similar understanding of art had been suggested by Karl Pearson, a British mathematician and a positivist philosopher (condemned by Lenin alongside Mach and Avenarius), who, revoking Avenarius's principle of economizing energy claimed: "The single statement, a brief formula, the few words of which replace in our minds a wide range of relationships between isolated phenomena, is what we term a scientific law." Thus, art, for Pearson, allows one to find "concentrated into a brief statement, into a simple formula or a few symbols, a wide range of human emotions and feelings." Both science and art were seen by Pearson as products of creative imagination—put on service to cognition—and could thus rely on similar principles. Karl Pearson, *The Grammar of Science* (London: A. and C. Black, 1900) 31, 35.

[161] Hildebrand, "The Problem of Form in the Fine Arts," 233.

example, solved the problem of extremely narrow streets by leaning cornices down and making them shorter, by which they achieved the effective form of a normal cornice observed from a distance: the inherent form was only a means of creation the desired effect; likewise, "if an architect establishes an inherent form only on the basis objective reality, without considering the impression that it has to produce in the given site and location, then he is not creating for the eye and is not yet creating an **artistic** form."[162]

Exploring the objective physiological mechanisms of a subconscious formation of effective form, Hildebrand came to the conclusion that it is determined by the movement of eyeballs within the eye socket, thus connecting visuality with kinesthetics. Thus the sculptor distinguished between two types of vision, seeing [*schauen*] and scanning [*abtasten* (literally, touching)].[163] Seeing occurred when an object was observed from a distance: the remoteness of the subject from the object allowed the latter to be observed it in its entirety; the resulting image was a flat, two-dimensional picture, which presented one with a purely visual idea

[162] Adolf Hildebrand, "Anhand zur 6. Auflage. Nachträgliche Aufsätze zum *Problem der Form*", *Das Problem der Form in der Bildenden Kunst* (Strassburg: J. H. Ed. Heitz (Heitz & Mündel), 1918) 130-136. Hildenbrand's emphasis. Translation by the author. German original: „Stellt der Architekt die Daseinform nur aus Daseingründen fest, also nicht nach Maßgabe der Wirkung, die sie an Ort und Stelle zu machen hat,--so hat er nicht für das Auge geschaffen und hat die **künstlerische** Gestaltung noch nicht begonnen." Russian translation: Adolf Hildebrand, „Prilozhenie k shestomu izdaniu. Dopolnitel'nye stat'i k probleme formy" [„Addition to the sixth edition. Additional articles on the problem of form], *Problema formy v izobrazitel'nom iskusstve* [*The Problem of Form in the Fine Arts*], transl. N. B Rozenfel'd and V. A. Favorskii (Moskva: Musaget, 1914) 84-87.

[163] Hildebrand's "scanning" [abtasten] (the term from the 1994 translation by Harry F. Mallgrave and Eleftherios Ikonomou in *Empathy, Form, and Space*) should not be confused with "scanning" [schauen] of Robert Vischer (same translation). Vischer, who was not translated into Russian and arguably not well-known (and whose theory, therefore, is not examined in this dissertation) already in 1872 distinguished between seeing [sehen] and scanning [schauen]: similar to Hildebrand's pair (which was obviously a development of Vischer's thought), seeing was visual, whereas scanning was kinesthetic. Vischer, however, unlike Hildebrand, opposed the unconscious process of seeing to a conscious process of scanning (movement and, thus, activity evoked consciousness), while Hildebrand considered both seeing and scanning unconscious processes. Robert Vischer, "On the Optical Sense of Form: A Contribution to Aesthetics," *Empathy, form, and space : problems in German aesthetics, 1873-1893.* Santa Monica, CA: Getty Center for the History of Art and the Humanities, 1994, 89-123 (93-94).

[*Gesichtsvorstellung*] of the object. Scanning, on the other hand, took place when the distance between the subject and the object was minimal. The closeness required movement of eyeballs, which resulted in obtaining several images that were then mentally combined into one. Scanning, therefore, produced kinesthetic images [*Bewegungsvorstellungen*], which alone allowed a comprehension of volume and three-dimensionality.[164] It was in the rift between the visual and the kinesthetic images that Hildebrand located the formation of effective form, and it was the transition by means of the the unconscious mechanisms of connection between the two that he held to be the domain of artistic creativity.

A sculptor, according to Hildebrand, worked with kinesthetic ideas, representing his impressions directly; and from these ideas a visual image was then formed. A painter, on the other hand, directly expressed his visual ideas on the surface: his task was to create a distant image that would give a full idea of form.[165] But the most developed mode of the representation of space was relief, Hildebrand's favorite medium, whose rejuvenation was judged by contemporaries to be his major artistic achievement: relief employed both kinesthetic and visual ideas to create both a clear distant image and an impression of volume. Operating with several surface planes, relief united these planes, creating a feeling of coherency of effective form and inviting the eye to follow its movement within.[166] It was relief that Hildebrand found the most kindred to architecture in its artistic form, since as architecture's task was "to unify its forms as an effect of relief."[167] For instance, Hildebrand explained that a Greek temple, "offers a close

[164] Hildebrand, "The Problem of Form in the Fine Arts," 229-236.

[165] Hildebrand, "The Problem of Form in the Fine Arts," 231-232.

[166] Hildebrand, "The Problem of Form in the Fine Arts," 251-253.

[167] Hildebrand, "The Problem of Form in the Fine Arts," 260.

spatial mass: the columns are placed so close to each other that they function as perforated, frontal layer of space. What we perceive is not a spatial body fronted by columns: the columns form part of the spatial body and our ideal movement into depth passes between them."[168] Thus the idea of space was created through "arranging objects (and with them the kinesthetic idea that they evoke) in such a way that they do not remain fragmented but become continuous"; within space individual objects became transformed into structural components of a seemingly continuous and unbroken whole, the "kinesthetic framework."[169]

A sculptor interested the practical application of psychophysiological aesthetics to his work, Hildebrand spent most of his time in Munich and was likely to be known to both to the future head of INKhUK Wassily Kandinsky (who lived in Munich between 1896 and 1915) and the future rector of VKhUTEMAS (between 1923 and 1926), the graphic designer and art theorist Vladimir Favorskii (in 1906-1907, a student in the Munich school of a Hungarian painter Simon Hollósy). Together with N. B. Rosenfel'd, Favorskii translated Hildebrand's essay into Russian in 1914. Apart from Favorskii, a leading Russian and Soviet graphic artist and art pedagogue, Hildebrand was read and propagated by Ladovskii's friend and early collaborator Cubist sculptor Boris Korolev, and by Ladovskii himself. It was through Hildebrand that Ladovskii received the ideas of unconscious perceptions and their interpretation being connected to the physiology of the eye, and of space as a coherent, continuous environment that binds separate objects together.[170] Moreover, as well as German-language positivist philosophy, the German-language tradition of formalist aesthetics (first of all, the writings of Hildebrand and

[168] Hildebrand, "The Problem of Form in the Fine Arts," 259.

[169] Hildebrand, "The Problem of Form in the Fine Arts," 239.

[170] See Dokuchaev, "Poiasnitel'naia zapiska," 88; Mikhailov, *Gruppirovki Sovietskoi arkhitektury*, 44.

Wölfflin) enjoyed a great popularity in Russia. Constituting the mainstream of aesthetic discourse before the Revolution, in the aftermath of October 1917 it was somewhat mitigated by various sociological approaches. Yet, the formalist core of the psychological and energetic approach to aesthetics remained intact. Its stronghold, in particular, was the Russian Academy of Artistic Sciences (Gosudarstvennaia akademia khudozhestvennykh nauk, RAKhN; from 1925 on, State Academy of Artistic Sciences, GAKhN), the state-run think-tank of aesthetics and art history organized in 1921 in order "to synthesize the sciences of art [*iskusstvovedcheskie nauki*] in three major directions: sociological, psychophysical, and philosophical, by means of an analytical study of individual arts" and to be "an expert-consulting organ in the matters of art" for the Soviet state.[171] Kandinskii initially headed the Psychophysical department of RAKhN, where he moved after he was forced to leave INKhUK. But in 1921 he left Russia—officially, in order to open a Berlin branch of RAKhN. It was left to the new head of the Psychophysical department, art historian and pedagogue Anatolii Bakushinkii (1883-1939) to lead the development of psychophysiological aesthetics and—in spite of his own traditionalist artistic tastes—to contribute to a popularization of the energetic discourse among modernist artists and architects.

Bakushinkii's theory, articulated in his 1925 book *Khudozhestvennoe tvorchestvo i vospitanie* [Artistic creativity and education] was based on a distinction between two primary modes of aesthetic perception: empathy [perezhivanie] and cognition [poznanie]. Although

[171] P. S. Kogan, "O zadachakh akademii i ee zhurnala" ["On the tasks of the Academy and its journal], *Iskusstvo. Zhurvnal Rossiiskoi Akademii Khudozhestvennykh Nauk* [*Art. The Journal of the Russian Academy of Artistic Sciences*] No.1 (1923): 5-12. Russian original: "путем аналитического изучения отдельных искусств синтезировать искусствоведческие науки в трех основных направлениях: социологическом, психофизическом и философском"; "быть экспертно-консультативным органом по вопросам искусства."

another term, *vchustvovanie*, is usually reserved for the notion of empathy in Russian aesthetics[172]—Bakushinkii clearly wanted to distance himself from empathy theory, which was too often accused it subjectivism—the definition of *perezhivanie* betrays it genealogy and exposes Bakushinskii's opposition's indebtedness to Lipps's distinction between subjective and objective knowledge. *Perezhivanie*, governed by emotion and will, was an irrational internal recreation of an artistic image "with all the exertion of the forces of soul" [*so vsem napriazheniem dushevnykh sil*] within the viewing subject, a recreation that excluded the external world. *Poznanie*, on the other hand, was based on logics and cognitive processes concerning with the external world and its objects "not in the process of their creation, but as a given thing" [*ne kak tvorimogo, no kak chego-to dannogo*]. *Perezhivanie* was the only "basic and original, truly artistically-creative" act, to which *poznanie* was subordinate as a 'materialization' of artistic image. This secondary cognitive mode of perception included both "material-technical" and "analytical-cognitive" moments [*momenty material'no-tekhnicheskii i analiticheski-poznavatel'nyi*].[173]

Artistic perception, according to Bakushinskii, "went to the depths of the unconscious," where it "formed the elements of consciousness." If an artist moved from the unconscious to the conscious, expressing his internal, initially intuitive, vision in a materialized form, the artistic perception of a beholder moved in the opposite direction—from the perception of material form towards the inner, ultimately irrational, states of consciousness. Artistic perception, Bakushinkii

[172] See, for instance, N. B. Rozenfel'd, V. A. Favorskii, "Ot perevodchikov" ["From the translators"], Gildebrand, *Problema formy*, 12-15.

[173] Anatolii Bakushinksii, *Khudozhestvennoe tvorchestvo i vospitanie* [*Artistic Creativity and Education*] (Moskva: Novaia Moskva, 1925). Web. 4.20.2014 <http://setilab.ru/modules/article/view.article.php/162/c24>. Bakushinskii himself prioritized *perezhivanie* over *poznanie* and even defended mimetic art as the one that facilitates a creation of internal image.

explained in empiriocriticist terms, impacted a person from without, organizing such lower cognitive processes as primary sensations (color, shape, line, light, mass, volume, and so on, as well as their combinations in space and on a plane), which were then united into primary complexes. At this stage, however, these states of consciousness provoked a reaction of the will—a "creative need in internal organization of external impressions," which resulted in elementary emotional reactions.[174] The next step in the process of perception of a work of art, Bakushinkii explained, consisted in forming increasingly more complex combinations of primary sensations into complicated networks, which were then contextualized within the contents of consciousness and compared to the beholder's previous experience. From the integration of formal elements of a painting on a plane [*postroeniia elementov kartiny na ploskosti*] (which Bakushinskii defined as a "construction") the perception of a beholder moved towards illusionary depth, to the perception of (again, illusionary) color, light, volume, distances, and their relationships. These relationships among the represented objects led to a perception of the content of art, its subject-psychological form [*k siuzhetno-psikhologicheskoi forme*]. Along this movement from form to content the conscious, cognitive mode of perception [*poznanie*] acquired an ever greater role. A pure *poznanie*, thus, could occur only in relation to pure content, in which all formal elements were eliminated. Moreover, the increased the role for consciousness was accompanied, for Bakushinkii (as for Avenarius), by an intensification of attention, leading from a state of an absolute distraction during the perception of formal elements to an utter concentration of attention in the rational perception of content.

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[174] Bakushinksii, *Khudozhestvennoe tvorchestvo i vospitanie.* Translation by the author. Russian original: "творческую потребность в внутренней организации внешних впечатлений."

Responding to empiocriticist agenda of economizing perceptive energy, the postulates of aesthetic theories of Bakushinskii and Hildebrand were actively used by Rationalist thinkers. Most importantly, the Rationalists explored the problem of the perception of architectural form—the fundamental problem that, for them, determined not only the methods of generating visual form, but the meaning and purpose of architecture and the essence of architectural creativity.

Architectural Expression

Both Ladovskii and Lissitzky argued vehemently against any form of cognitive work in the perception of architectureб—sometimes severely criticizing their Rationalist comrades. One of the earliest projects of Rationalism, Vladimir Krinskii's "Sky-scraper in Moscow" (1922-1923) attempted to find an architectural expression for Vladimir Mayakovsky's famous line "[we] thump into the skies reinforced concrete" [*[my] v nebesa sharakhaem zhelezobeton*].[175]

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[175] Krinskii cited Mayakovskii's poem "My idem" ("We are coming," 1919). The poem opened with the words:
Кто вы?
Мы
разносчики новой веры,
красоте задающей железный тон.

Чтоб природами хилыми не сквернили скверы,
в небеса шарахаем железобетон.
Победители,
шествуем по свету
сквозь рев стариков злючий.
[Who are you?
We
are carriers of a new faith,
[which] gives an iron tone to beauty.
So that squares wouldn't defile with [their] meager natures
[we] pump into the skies reinforced concrete.
The winners,

Highly popular among the "futurists," this Mayakovsky's verse was jokingly disapproved by Lenin: "Why to thump [it] into the sky? We need reinforced concrete here on earth."[176] If Lenin was concerned with a waste of valuable concrete, Ladovskii and Lissitzky saw a similar problem—an unnecessary waste of cognitive resources—in Krinskii's project. To address the problem of the expression of the building's hidden reinforced concrete construction, Krinskii's sky-scraper employed purely semiotic (metonymic) means: concrete rods of the building's skeleton literally represented the iron structure hidden within the concrete walls. In Charles S. Peirce's classification of signs the sky-scraper was an icon, representing the literal, visual appearance of a hidden object (for instance, construction). Although iconicity was definitely a more "avant-garde" semiotic technique than symbolism, and was frequently discussed in relation to American sky-scraper construction (Ladovskii, for example, noted that frequent Gothic motives were intended to provoke a comparison with Gothic temples, associated with a strive upwards[177]), Lissitzky opposed it just as any semiotic techniques in architecture: "The vast majority [of people] confuses construction as it is and the forms in which it is expressed. This

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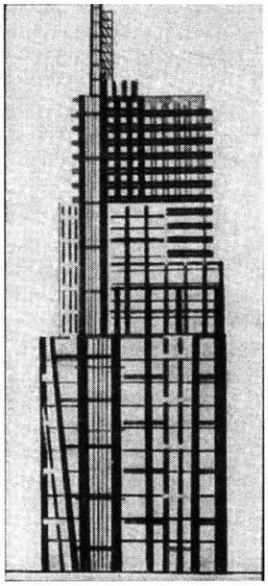
[we] march through the world
under the wicked roar of old men].
"Neboskreb na Lubianskoi ploshchadi. Proekt V. F. Krinskogo. 1923" ["Sky-scraper on Lubianka square. A project of V. F. Krinskii. 1923"], *Izvestia ASNOVA* No. 1 (1926): 5;Vladimir Krinskii, "Vozniknovenie i zhizn' Assotsiatsii Novykh Arkhitektorov—ASNOVA" ["Emergence and life of the Association of New Architects—ASNOVA"], *Sovetskaia Arkhitektura* [*Soviet Architecture*] No.18 (1968): 20-28 (23-24). See also Khan-Magomedov, *Ratsionalizm,* 128.

[176] I. A. Armand, "Vospominania o Vladimire Il'iche Lenine [Recollections about Vladimir Il'ich Lenin]," Institut Marksizma-Leninizma [Institute of Marxism-Leninism], *Vospominania o Vladimire Il'iche Lenine v desiati tomakh* [*Recollections about Vladimir Il'ich Lenin in 10 vols.*]. Vol. 8 (Moskva: Izd-vo Politicheskoi Literatury, 1991) 99-107 (104). Translation by the author. Russian original: «Зачем же в небеса шарахать? Железобетон нам на земле нужен».

[177] Enael [Nikolai Ladovskii], "Neboskreby SSSR i Ameriki" ["Sky-scrapers of the USSR and America"], *Izvestia ASNOVA* No.1 (1926): 4-6. Ladovskii's initials N. A. L. are easily read behind the pseudonym "Enael'," just as "El" in Lisstizky's pen-name stands for the first letter of his name Lazar'.

vertical-horizontal grid of "construction" is stuck to the façade today as meaninglessly as pointed arches or rooster's crests of "style *à la russe*" were stuck yesterday."[178]



Figs. 2.2-2.3. Vladimir Krinskii. Sky-Scraper in Moscow. 1923.

Lissitzky's critique of semiotic techniques as inappropriate for architecture was informed by the so-called empathy theory, first developed in 1873 by German philosopher of aesthetics Robert Vischer in his treatise *Über das optische Formgefühl: Ein Beitrag zur Aesthetik* (*On the Optical Sense of Form: a Contribution to Aesthetics*). Empathy [Einfühlung] was, for Vischer, an unconscious, irrational process of losing oneself within an external object: "...I project my own life into the lifeless form, just as I quite justifiably do with another living person. Only ostensibly do I keep my own identity although the object remains distinct. I seem merely to adapt and attach myself to it as one hand clasps another, and yet I am mysteriously transplanted and magically

[178] El Lisstiskii, "Arkhitektura zheleznoi i zhelezobetonnoi ramy," *Stroitel'naia promyshlennost'* [*Construction Industry*] No. 1 1926: 59-63 (59). Translation by the author. Russian original: «...Преобладающее большинство путает конструкцию, как таковую, с теми формами, в которых она выражается. Эту вертикально-горизонтальную клетку «конструкции» лепят сегодня на фасад с такой же бессмысленностью, как лепили вчера стрельчатые арки, или петушки «стиля рюсс».

transformed into this Other."[179] Fundamental for late-nineteenth-century aesthetic thought, particularly in Germany and in countries like Russia, that moved within its cultural sphere, empathy theory could hardly be avoided by any aesthetic thinker. Thus although Hildebrand never used the term *Einfühlung*, his explanation of the mechanism of unconscious artistic perception betrays an indebtedness to this concept: "Just as the child learns to understand laughter and tears by joining in the process and is able to feel, through muscular activity that he himself calls forth, the inner cause of the pleasure or pain, so does all gestural expression and all movement on the part of others become for us a comprehensible expression of internal processes, a comprehensible language."[180] This mechanism of projection animated new, previously unknown phenomena, connecting them to similar appearances that one encountered in the past.

The notion of empathy was particularly important for Expressionism with its preoccupation with provoking strong, emotional responses to visual form. Although trying to dissociate his thought himself from empathy theory, when elaborating the notion of expression as a personal, subjective contribution of an artist to the creation of form, a contribution intended for a subjective response, Hildebrand constructed a mechanism of its production that operated not through an objectivist psychophysiological trigger-response scheme, but through a visceral identification with an object. Uniting kinesthetic and visual ideas into a category of (visual) idea [*Vorstellung*], Hildebrand claimed that it was informed by but was by no means reducible to perception [*Wahrnehmung*].[181] Art presented "die Vorstellung,... nicht die Wahrnehmung." [182]

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[179] Robert Vischer, "On the Optical Sense of Form: a Contribution to Aesthetics," *Empathy, Form, and Space*, 89-124 (104).

[180] Hildebrand, "The Problem of Form in the Fine Arts," 261.

[181] The category of Vorstellung was brought into the center of metaphysical philosophical discussion by Schopenhauer and, later, Hartmann, who elevated it to the status of the creative source behind Schopenhauer's will.

For instance, rather than representing movement as a blurry hindered perception, as a photographic camera would have, an artist would choose an expressive moment of this movement, and thus a static form. This opened a path to illusionism, and indeed, Hildebrand admitted that "the expression that we see in form does not always accord with reality."[183] Thus, a weak person might have possessed a strong jaw line, and a moving voice might have belonged to a person who "feels nothing."[184] The task of artistic creation was, for Hildebrand, not an expression of the inherent form through an effective form, but the creation of a *Vorstellung* through a manipulation with *Wahrnehmung*. To describe the creation of a *Vorstellung*, a subjective, personal experience of an object, Hildebrand used the notion of expression. "In the representation, this imprint [effect upon the beholder's psyche] must be tangibly and forcefully expressed," clarified Hildebrand, and the intensity of expression—the measure of artist's personal contribution to the form—was the requirement of a true work of art.[185]

The cradle of Soviet modernism, Expressionism attracted Ladovskii and Krinskii during the Sinskul'lptarkh/Zhivskul'ptarkh period (1919-1920), and remained important for such prominent architects as Il'ia Golosov and Konstantin Mel'nikov throughout the 1920s and

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It was later developed by Hildebrand's friend Conrad Fiedler, who juxtaposed Vorstellung to cognition as an artistic, irrational form of comprehending the world to a logical one. Mallgrave and Ikonomou, "Introduction," *Empathy, Form and Space*, 30

[182] Hildebrand, *Das Problem der Form*, Strassburg, 1901: 101 (English translation: Hildebrand, "The Problem of Form in the Fine Arts," 263). In psychology, the notion *Gesichtsvorstellung* was employed by Wilhelm Wundt. See Hugo Münsterberg, *Beitra¨ge Zur Experimentellen Psychologie*(Freiburg: Mohr, 1889).

[183] Hildebrand, "The Problem of Form in the Fine Arts," 262.

[184] Hildebrand, "The Problem of Form in the Fine Arts," 262.

[185] Hildebrand, "The Problem of Form in the Fine Arts," 236.

beyond.[186] Little wonder, then, that the notion of empathy was at the center of early-Soviet discussions of artistic perception. At an INKhUK meeting devoted to the questions of perception of architectural forms (14 April 1920) A. Petrov argued that architectural forms should exhibit qualities of animate objects in order to make the beholder "feel" architecture by an analogy with their own body:

> The more similar architectural work is to a human organism, the more vividly it is perceived. This explains the cause of our desire to endow inanimate objects with qualities that we understand. This is the origin of such expressions as "cold stone" [*khladnyi kamen'*], "sonorous colonnade" [*zvuchnaia kolonnada*], and so on. When they become understandable, works of art agitate us more strongly. For example, intuition has always been parallel to poetry. The latter has always dealt with sketching human feelings. Thus the ubiquitous comparisons and identifications by analogy. Poets say: "The air does not want to overcome its slumber" (Pushkin), "The blind [town] square sneaked nearby" (Mayakovsky). Poetical method endows inanimate objects with the qualities of animate ones, because they are most understandable for us. I believe that a similar method existed in architecture. The analogy of the human in art goes deeper. As there are male and female rhythms in poetry, there were as female and male principles in architecture. The example of Ionic and Doric orders is already quite compelling.[187]

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[186] Speaking of Mel'nikov's Paris Exhibition pavilion, prominent art critic Mikhail Ilyin, for instance, classified the architect as an Expressionist. M. Illyine, "L'expressionisme en architecture," *L'Architecture d'Aujourdhui,* Vol.1, No. 2 (1930): 29-31.

[187] A. Petrov, "Voprosy vospriiatia arkhitekturnykh form" ["Questions of perception of architectural forms"], Minutes of the Working Group of Architects at INKhUK, 14 April 1921, quoted in Khan Magomedov, *Ratsionalizm,* 112. Translation by the author. Russian original: «Чем больше архитектурное произведение напоминает своим строем человеческий организм, тем ярче оно воспринимается. Этим объясняется причина нашего стремления наделить неодушевленные веди качествами, понятными нам. Отсюда выражения, подобные: "хладный камень," "звучная колоннада" и т.п. Делаясь понятными, произведения искусства больше нас волнуют. Так, например, интуиция всегда была параллельна поэзии. Последняя всегда имела дело с рисовкой человеческого чувства. Отсюда очень часто встречающиеся сравнения и отождествления по аналогии. Поэты говорят: "Свой дремоты превозмочь не хочет воздух" (Пушкин); "слепая площадь кралась близко" (Маяковский). Метод у поэтов сводится к подобным наделениям неодушевленных предметов качествами предметов одушевленных, как наиболее нам понятными. По-моему, подобный же метод существовал и в архитектуре. Аналогия человеческого в искусстве идет глубже. Как в поэзии существуют мужские и женские рифмы, так и в архитектуре есть начала женское и мужское. Пример ионических и дорических ордеров довольно убедителен сам по себе».
In his quotation, Petrov somewhat distorted the line from Mayakovsky's poem "Ulichnoe" ["Streety"] (1913) "Podniav rukoi edinyi glaz, krivaia ploshchad' kralas' blizko" ["Having propped [her] only eye with a hand, one-eyed square sneaked nearby].

Petrov was, in fact, articulating the same principle that Maxim Gorky who, looking back at his writing method in 1928, described as the essence of artistic work:

> Imagination is, in its essence, a thinking about the world, but thinking predominantly in images, "artistic" [thinking]; one could say that imagination is an ability to endow natural elements and objects with human qualities, feelings and even intentions. We read and hear: "the wind whines," "moans," "the moon thoughtfully shines," "the river whispered old epics," "the forest frowned," "the wave wanted to move the stone; it winced under its blows, but did not surrender," "the boot did not want to climb on the leg," "glass panes sweated"—although glass does not have perspiratory glands.[188]

Ladovskii's attitude to empathy was, however, more cautious, being closer to that of Heinrich Wölfflin, who, alongside Conrad Fiedler, Theodor Lipps, and August Schmarsow, in the 1880s redefined empathy as the beholder's psychological identification with an observed object.[189] Wölfflin, whose work was particularly well-known in Russia,[190] saw empathy as an intuitive kinesthetic perception, in which the subject's body became the standard for measuring and judging the outside world.[191] This concept was developed by him in regards to architecture

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[188] Maxim Gorky, "O tom, kak ia uchilsia pisat'" ["How I learned to write"] (1928), *Maksim Gorky*. Web. 5.31.2014 < http://gorkiy.lit-info.ru/gorkiy/articles/article-351.htm>. Translation by the author. Russian original: «Воображение тоже, в сущности своей, мышление о мире, но мышление по преимуществу образами, «художественное»; можно сказать, что воображение — это способность придавать стихийным явлениям природы и вещам человеческие качества, чувствования, даже намерения.
Мы читаем и слышим: «ветер плачет», «стонет», «задумчиво светит луна», «река нашептывала старые былины», «лес нахмурился», «волна хотела сдвинуть камень, он морщился под ее ударами, но не уступал ей», «стул крякнул, точно селезень», «сапог не хотел влезать на ногу», «стекла запотели»,— хотя у стекол нет потовых желез».

[189] Less rooted in experiment and more connected to literature and art theory, an alternative, Anglo-American tradition of empathy theory, was represented by Vernon Lee, Kit Anstruther-Thomson, William and Henry James.

[190]Although in Russia, Wölfflin's German-language dissertation was probably read by only a handful of art historians and aestheticians, such works as Renaissance and Baroque (1888) and Classic Art (1898) were translated and widely discussed. For instance, it was referenced by a member of the Working group of architects A. Petrov during an INKhUK discussion of the evolution of forms. See Khan-Magomedov, *Ratsionalizm,* 117.

[191] Wölfflin's works were translated into Russian both before and after the Revolution: *Renaissance und Barock* («Ренессанс и барокко», 1913); *Die Klassische Kunst* («Классическое искусство», 1912*); Kunstgeschichtliche Grundbegriffe* («Основные понятия истории искусства», 1930); *Italien und das deutsche Formgefühl* («Искусство Италии и Германии эпохи Ренессанса», 1934)—the latter translated just three years after its initial publication in German (1931).

already in his 1886 dissertation, "Prolegomena to a Psychology of Architecture," where Wölfflin, arguing against Vischer's emphasis on visual perception, claimed that "*Physical forms possess a character only because we ourselves possess a body*. If we were purely visual beings, we would always be denied an aesthetic judgment on the physical world. But as human beings with a body that teaches us the nature of gravity, contraction, strength, and so on, we gather the experience that enables us to identify with the conditions of other forms."[192]

Likewise, endorsing the idea that art has to provoke an emotional response of the beholder,[193] Ladovskii warned against a possible confusion of empathy with a mimetic representation of nature (an identification suggested by the German art historian Wilhelm Worringer[194]) and connected it, instead, with abstraction, understood as a scheme of general organization. Analyzing Petrov's argumentat, Ladovskii accused it of unscientific vagueness and suggested reducing it to an axiom "An object interests us insofar its organization resembles ours."[195] Such compositional qualies (in Ladovskii's Machist terminology, the principles of

[192] Wöllflin's emphasis. *Empathy, form and space*, 151. See also, John Macarthur, "Movement and tactility: Benjamin and Wölfflin on imitation in architecture," *The Journal of Architecture*, Vol. 12, No. 5 (2007): 477-487.

[193] We understand the external world through our internal experience. In the outside world we can be interested in separate properties and qualities as well as in their complexes. These complexes can be close to us, they can be more understandable than the very organization of man. In these complexes I feel myself, although I still do not know my own organization; it is in them that I see, feel and comprehend this organization. Perhaps, an object, without being human-like, will closely and clearly resemble to a human his like. It is likely, for example, that some two stones, resting one upon the other in a certain way, sometimes would remind us of a living individual. A maximum of man is more understandable to us than a man.

[194] Juliet Koss has drawn parallels between Worringer's opposing notions, having emphasized that Worringer understood abstraction as uneasiness and thus related it to defamiliarization (estrangement) *avant la lettre*, while empathy, for Koss, contained an element of self-estrangement, distancing from the self, and thus, discomfort. However, rather than Worrigner's actual intention, this interpretation seems to be accentuating its theoretical potential. Juliet Koss, "On the Limits of Empathy," *The Art Bulletin*, Vol. 88, no. 1 (March 2006): 139-57 (148).

[195] Minutes of the Working Group of Architects at INKhUK, 14 April 1921, quoted in Khan-Magomedov, *Ratsionalizm*, 113. Translation by the author. Russian original: «Нас предмет интересует постольку, поскольку он напоминает своей организацией—нашу».

organization of elements within a complex) as symmetry, for example, were intuitively understandable to a person due the organization of his or her own body: "Let us consider an example: a man is built according to a vertical symmetry. I express this vertical symmetry somewhat brighter, although abstractly and schematically. And although it results in an abstraction, in it I can easily see a resemblance with a person; perhaps, this abstraction will have become more humane for me."[196]

Rejecting iconicity, the Rationalists continued to explore the possibilities of architectural expression, following the direction pointed to by Russian formalist theory, which promulgated the category of expression [*vyrazhenie*], free of not only likeness but even resemblance to an object, over representation [*izobrazhenie*], whether symbolic or metonymic.[197] The field for investigation was, perhaps, opened by the structure of Russian language itself, in which the term *vyrazhenie* [expression] possesses a double meaning. Since the word is comprised of the prefix *vy-*, signifying a movement out, and the root *razh,* connected to *obraz* (image), it means literally an expression through image. *Obraz*, in turn, derives from the root *rez* (to cut), which connects it to such words as *razit'* (to fight) and *vrag* (enemy). *Vyrazenie* is thus related to both *izobrazhenie* (a creation of image) and *srazhenie* (a battle). These two lines of meaning, as it were, were projected into the Rationalist program, which substituted *vyrazhenie* as a single term with a pair *vyrazitel'nost'/vyiavlenie* (expressivity/revealing) that usually appeared in the descriptions of Rationalist student assignments. *Vyrazitel'nost'* (expressivity, distinctiveness) referred to

[196] Khan-Magomedov, *Ratsionalizm,* 113. Translation by the author. Russian original: «Возьмем пример: человек построен [по] вертикали симметричн. Я беру и как-то ярче, хотя и отвлеченно и схематично, выражаю эту вертикальную симметрию. И, несмотря на то, что получается абстракция, я в ней легко могу видеть сходство с человеком, возможно в этой абстракции для меня будет больше человеческого».

[197] D. S. Nedovich, "Vyrazhenie," *Slovar' khudozhestvennykh terminov,* 106.

hyperbolizing and otherwise accentuating the properties of form in order to attract viewers' attention and make them noticeable. *Vyiavlenie* (revealing), on the other hand, comprised of the prefix *vy-* [out] and the root *iav'* [appearance], was understood as a revelation of inner truth through phenomena. To use Hildebrand's terminology, if *vyrazitel'nost'* was preoccupied solely with inherent form, *vyiavlenie* dealt with expressing inherent form through the effective one. In the words of a prominent Rationalist and VKhUTEMAS pedagogue Nikolai Dokuchaev,

> To **express** [*vyrazit'*] a form means to give its characteristic properties, that is, to make obvious its, say, geometrical structure—its rectangularity and proportionality, the commensurability of its surfaces, etc. In other words, here the artist-architect has to be, essentially, a **geometer**. To **reveal** [*vyiavit'*] a form means to make its structural properties—all the basic characteristics of form—visually clear and sharply perceived. In other words, an artist, an architect, wishing to endow its architectural form with certain qualities and properties, has to make these properties correctly perceived (according to his vision) by considering all possible impediments, such as: changing conditions of light, the distance and viewpoint from which the form is viewed, the impact and influence of the surroundings on the form, etc. Here, the artist has to approach the task as a **composer**.[198]

Vyrazitel'nost', a concept initially promoted by Dokuchaev, dealt with direct impression that an artwork left upon the psyche of the beholder, with vivid and active images that stimulated certain emotions and thus certain types of behavior; it most directly expressed the essence of architecture as an art. Dokuchaev believed that art had to create "more intensely visually

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[198] Dokuchaev's emphasis. Dokuchaev, "Metodicheskaia zapiska," 90. Translation by the author. The presence of this opposition in Ladovskii's pedagogical conversations was also recorded by Selim Khan-Magomedov in his interviews with former Rationalists. Khan-Magomedov, however, misidentified exposure with abstract assignments, and expressivity—with the industrial ones (Khan-Magomedov, *Ratsionalism*, 162). Russian original: «**Выразить** форму—значит дать ее характерные признаки, т.е. сделать заметными ее, например, геометрическую структуру—прямоугольность и известную пропорциональность, соизмеримость ее плоскостей и т.д. Иными словами, здесь художник-архитектор должен быть, в сущности, **геометром**. **Выявить** форму—это значит сделать ее свойства структуры—все основные признаки формы—зрительно четко и ясно воспринимаемыми. Другими словами, художник, архитектор, желая придать своей архитект.[урной] форме определенные качества, свойства—должен сделать еще эти свойства правильно воспринимаемыми (как этого хочет художник), путем учета всех возможных затруднений, каковы: меняющиеся условия освещения, расстояния и точки зрения, с которых форма будет рассматриваться, воздействие и влияние на форму окружающей обстановки и т.д. Здесь художник должен подойти к задаче уже как **композитор**».

perceived forms," and thus to produce an above-average stimulation of the visual nerve. This was, for him, the difference between products of art and those of nature (as those studied by physicists): whereas art highlighted the characteristic making it obvious to the beholder, the characteristic in nature could only be discovered by science.[199]

Thus refined by Ladovskii from an Expressionist metaphysical connotation, the notion of *vyrazitel'nost'* merged with its counterpart, *vyiavlenie.* Along the way, however, it lost clarity and distinctiveness, which eventually led to its de facto disappearance from Rationalist theoretical discourse (although it remained shyly present, as a self-explanatory term, in the formulations of student assignments). Instead, it was *vyiavlenie*, revealing, an "objective" and "scientific" notion, that became the predominant Rationalist interpretation of expression. Ladovskii postulated:

> Can we permit [*dopusitit'*; can also be translated as "assume"] that an architect, building a form, would not know how it will be perceived by the beholder? Such an assumption [*dopuschenie*] would signify a complete unscrupulousness [*besprintsipnost'*] and inability of any mastery of geometric expressivity. It is necessary to postulate that the **architectural-geometric perspective on material form consists in a reworking [of it] that allows the spectator to see its true geometric character as much as is necessary for the given situation.**[200]

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[199] Nikolai Dokuchaev, "Arkhitektura i tekhnika" ["Architecture and technology"], *Sovetskoe iskusstvo* [*Soviet Art*], No. 8-9 (1926): 3-9 (3); Khan-Magomedov, *Ratsionalizm,* 114; *Dokuchaev,* "Metodicheskaia zapiska," 88.

[200] *Izvestia ASNOVA,* No. 1 (1926): 3-4. Ladovskii's emphasis. Translation by the author. Russian original: «Можно ли допустить, чтобы архитектор строя форму не знал как ее будет воспринимать зритель? Такое допущение означало бы полную беспринципность и невозможность какого бы то ни было мастерства в области геометрической выразительности. Необходимо установить положение, что **архитектурно-геометрическая сторона материальной формы заключается в такой ея проработке, при которой зритель действительно видит ее геометрическую характеристику в той мере, в которой это необходимо для данного случая**». Ladovskii's emphasis.

The elaboration of the concept of *vyiavlenie* [revealing] can be traced back to the seminal 1921 discussion of the relationship between construction and composition at INKhUK.[201] In the course of the discussion, Ladovskii had defined construction as an "absence of superfluous materials or elements" and interpreted composition as the basic method of architecture—"a hierarchy and subordination" [*ierarkhiia, sopodchinennost'*], presenting both as particular cases of the artistic problem of revealing, *vyiavlenie*.[202] Ladovskii illustrated his idea with drawings of a cube, the first of which, "Construction," revealed the geometrical form of the object, while the second, "Composition," revealed the object's compositional center, to which "the whole design is subordinated... according to the principle of similarity and movement."[203] Construction, in other words, allowed for the revelation of a singular form, whereas composition dealt with revealing relationships of several forms or several elements within a form. Since composition was proclaimed by the Rationalists to be the method of organization of space, the "material of architecture," revealing was to become the predominant architectural method.

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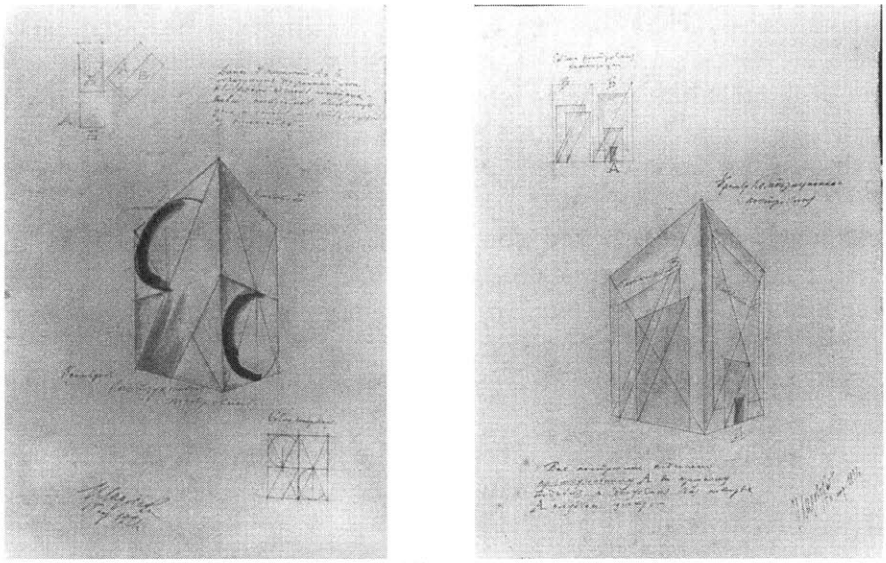
[201] More on the discussion see Selim O. Khan-Magomedov, *U istokov formirovaniia ASNOVA i OSA—dve arkhitekturnye gruppy INKhUKa* [*At the Roots of the Formation of ASNOVA and OSA—Two Architectural Groups of INKhUK*] (Moskva: Arkhitektura, 1994), and Maria Gough, *The Artist As Producer: Russian Constructivism in Revolution* (Berkeley: University of California Press, 2005).

[202] Khan-Magomedov, *Ratsionalism*, 105.

[203] Khan-Magomedov, *Ratsionalism*, 105. Translation by the author. Russian original: «все построение подчинено... по принципу подобия и движения».



Figs. 2.4-2.5. Nikolai Ladovskii, "Construction" and "Composition", 1921.

Situated at the core of the architectural work, revealing became the major task of Rationalist pedagogical assignments, developed throughout the 1920s, while composition was interpreted as the key architectural method, which alone enabled the creation of space. Ladovskii's pedagogy, methodically moving from more elementary to more complex architectural tasks, mirrored of the Rationalist vision of architecture as a system of subjectively perceived forms and psychological rules of a system's design.

The Architecture of Space

When in the fall of 1920, the First and Second SGKhM were united into VKhUTEMAS, Higher Art and Technical Studios, Ladovskii, Krinskii and Dokuchaev each received their individual workshops. The three workshops immediately united into Obmas [*Ob'edinennye levye masterskie*], United Left Workshops, allowing Ladovskii to push for autonomy within VKhUTEMAS and to acquire independence in developing an educational program. Obmas,

which functioned for the three academic years between 1920 and 1923, and the course "Space," which Ladovskii secured for himself afterwards, were among the primary introductory (so called, propedeutic) courses that VKhUTEMAS offered to incoming students in a series of classes, whose purpose and structure resembled the Bauhaus *Vorkurs*. "Space" became the most developed course within this "objective" (analytical) system of VKhUTEMAS propaedeutic courses. Moreover a Rationalist, Rukhliadev, became the dean of the Department of Architecture, solidifying the Rationalist influence among architects and making architecture the stronghold of Formalism and empiriocriticism, while leaving painting and applied arts to the Constructivists.[204] Even when in 1924 Aleksandr Vesnin opened a Constructivist architectural workshop, the influence of the Rationalists within VKhUTEMAS remained predominant.[205]

This psychological reality that architecture had to construct was defined by the Rationalists as space—a subjective, refracted reflection of the material world. Thus student assignments given out at United Left Workshops aimed at analyzing the laws of the psychological formation of space and at mastering the art of constructing coherent spatial perception. This approach was based on a typology of perceptual qualities, which were

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[204] While members of ASNOVA taught the course "Space" and Cubist sculptors Boris Korolev and Aleksei Babichev taught "Volume," most other pedagogues of the Basic Department belonged to the Constructivist movement: Aleksandr Vesnin, Liubov' Popova, and Gustav Klutsis ("Color"); Anton Lavinskii ("Volume"); and Aleksandr Rodchenko ("Graphics"). Constructivists' explorations of these formalist problems within VKhUTEMAS and beyond testify to their own interest in psychophysiological aesthetics, an interest yet to be explored by scholarship.

[205] This situation was recorded by Bruno Taut, who—as if trying to compensate for his very own influence upon Soviet modernist architecture at its earliest, Expressionist, period—commenting on the differences between Soviet and European architectural avant-gardes, mentioned that Soviet architects "are prone to a purely artistic approach. This deviation is especially pronounced at the Architectural Department of VKhUTEIN. Therefore, visiting it, I considered it necessary to emphasize the necessity of strengthening practical education." Bruno Taut, "Stroitel'stvo i arkhitektura novoi Moskvy" ["Construction and architecture of new Moscow"], *Stroitel'stvo Moskvy* [*The Construction of Moscow*], No. 4 (1929): 12.

subsequently united into an organized complex spatial image. When the Basic Department was formed at VKhUTEMAS in 1923, the architectural introductory course was officially recognized as "Space" and was taught and elaborated by the first generation of Ladovskii's VKhUTEMAS graduates (among them Viktor Balikhin, Sergei Glagolev, Mikhail Korzhev, Ivan Lamtsov, V. Petrov, Iurii Spasskii, and Mikhail Turkus). "Space" developed Ladovskii's typology of spatial sensations and adapted it for the purposes of architectural education. The course assignments were classified according to three different parameters: the genre of expression (abstract or architectural), the artistic task (formal expressivity or the revealing of form), and finally, the formal quality to be expressed (geometrical, physical, mechanical, or spatial properties), such that each assignment presented a combination of the three.

Unlike the two latter distinctions, which reflected the Rationalist understanding of architectural work, the first, according to which the Rationalists differentiated between industrial and abstract subjects, was strictly pedagogical in purpose. Traditionally-presented industrial assignments, submitted as architectural plans and drawings, prepared students for the real working situations of solving practical problems and presenting their work to clients. On the other hand, conceptual abstract assignments represented a formal idea for an architectural solution and were often submitted in clay, paper, wire, wood, or other sculptural media, justifying the name of Ladovskii's famous "model" [*maketnyi*] method of design.[206] This method

[206] Commonly, the Rationalist assignments were initially developed as sketches, then visualized as three-dimensional models (in clay, often with the supplementary use of cardboard, paper, wires, wood, and other materials), which were afterwards measured and represented on paper. Khan-Magomedov, *Ratsionalizm*, 146. Perceived as a radical innovation, clay modeling also allowed Ladovskii to "proletarize" architecture, visually transforming his students from clean and dressed intelligentsia into dirty laborers in working smocks: so dirty, in fact, that they were not allowed out of their workshops into the school corridors. Selim O. Khan-Magomedov, *Mikhail Korzhev* (Moskva: Russkii Avangard, 2009) 42-43.

allowed an easier evaluation of form under various changeable effects, such as light, atmosphere and view point.[207] But most importantly the model method represented the Rationalist vision of the building as an enclosed voluminous form, a vision that gestated within the Zhivskul'ptarkh Expressionist search for a synthetic art that eliminated distinctions between architecture and sculpture. "Because architecture operates with space," declared Ladovskii in one of Zhivskul'ptarkh meetings, "and sculpture—with form, it would be best to design the exterior of a building as a sculpture, and the interior—as architecture; the thickness of walls is not important. With this design, the outer form [of a building] would not necessarily express its inner content."[208] Although this definition was soon complicated by the Rationalist discussions, in which sculptural form was proclaimed only a prerequisite for the proper architectural work that connected forms in space, the group always preserved Ladovskii's initial interpretation of the individual building as sculpture.

Ladovskii's assignments also followed the distinction between revealing and expression, putting a particular emphasis on the former. Moreover, as a Rationalist architectural object revealed not an inherent form that could be intentionally modified by an architect but an ideal geometrical form existing in the architect's mind, Rationalist revealing bordered on illusionism. The Rationalists explored how inherent form could be evoked through controlling effective form, making a kind of manipulation possible: any quality could be "revealed," independently of whether or not it was really characteristic for the form.

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[207] Nikolai Dokuchaev, "Poiasnitel'naia zapiska," 81.

[208] Khan-Magomedov, *Ratsionalism,* 67. Translation by the author. Russian original: "Так как архитектура оперирует пространством, а скульптура—формой, то самое правильное будет снаружи проектировать здание как скульптуру, а внутри—как архитектуру, толщина стен не имеет значения. При таком проектировании не всегда наружный вид выразит внутреннее содержание."

Similarly, the second order of classification, which dealt with the spatial properties of perception, resulted from a Rationalist reading of empiriocriticism. Spatial perceptual qualities were classified into geometrical and physical (which included mechanical) ones and the means of their organization; if the former expressed forms and their perceived properties, the latter dealt with relationships between forms. This structure was reflected in the order of assignments that the students received. Most elaborated were geometric and physical properties, subdivided into a complex hierarchical system. For instance, a typology suggested by Viktor Balikhin asserted and analytically described the categories of surface, volume, mass, weight, and construction:

A. Geometric qualities of form in space.

1. Types of surfaces: a). plane; b). curved surfaces (cylindrical, conical etc., convex and concave); c). angles formed by polyline surfaces or by intersection of planes—internal and external.

2. Volume as a form, comprised of a closed system of surface. Typical volumetric forms: cylinder, parallelepiped, cone, sphere, etc., and their combinations. ...

B. Physical-mechanical properties of form.

1. Mass (of volume)—enclosed space infilled with matter. Systems of elements, exposing mass, have to evoke a visual penetration inside the volume and the sensation of the degree of density of its infill with mass.

2. Weight (of volume)—the movement of mass downwards under the force of gravitation.

3. Construction—a balancing system of couplings of interacting forms under the effect of the gravitation force.[209]

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[209] Khan-Magomedov, *Viktor Balikhin* (Moskva: Russkii avangard, 2009) 83-86. Translation by the author. Russian original: «А. Геометрические свойства форм в пространстве.
1. Типы поверхностей: а). плоскость; б). кривые поверхности (цилиндрические, конические и проч.,-- вогнутые и выпуклые); в). углы, образуемые ломанными поверхностями или пересечением плоскостей,-- внутренние и внешние...
2. Объем—как форма, образуемая замкнутой системой поверхностей. Типовые формы объемов: цилиндр, параллелепипед, конус, шар и т.п., а также их комбинации...
Б. Физико-механические свойства форм.

Complex geometrical forms were treated by the Rationalists as combinations of simple ones, and the clear representation of a complex form was accordingly based on an expression or revealing its elementary components. Articulations (horizontal and vertical for a cylinder; horizontal and the articulations of the generatrix for a cone; parallel sections for a sphere),[210] accentuations of the size of angles, the dimensions of the building, and the three-dimensionality of architectural form were used to highlight the qualities of these elemental forms. This led to recommendations for bending and intersecting plane surfaces in order to express or reveal an angle; for using scale, module and for proportional relationships for an articulation of dimensions; and for the use of projecting cornices and spatial voids (galleries and arches) for the representation of volume.

The very first assignment given by Ladovskii at his newly organized course at Obmas at VKhUTEMAS in October 1920 drew on the program of his own INKhUK "Construction" drawing. "What does it mean to **reveal a geometric image**?" asked Ladovskii, "Would we see in a mathematically-correctly built parallelepiped some other form—a sphere, a cone, a cylinder, etc.? No, we will see neither a sphere nor a cylinder, but neither will we see a cylinder with the geometrical properties specified in the assignment."[211] The assignment was formulated as a set

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1. Масса (объема)—заполнение замкнутого пространства материей. Системы элементов, выявляющие массу, должны вызывать зрительное проникновение внутрь объема и ощущение степени плотности заполнения его материей.
2. Вес (объема)—движение массы вниз под действием силы тяжести.
3. Конструкция—уравновешенная система сопряжений взаимодействующих форм под действием силы тяжести.
В. Расположение поверхностей и объемов в пространстве (организация пространства)...
Г. Композиционно-организующие средства—для построения и выявления форм и их системы в пространстве».

[210] Dokuchaev, "Metodicheskaia zapiska," 93.

[211] Ladovskii's emphasis. *Izvestia ASNOVA* No. 1 (1926): 4. Translation by the author. Russian original: «Но что означает **выявить геометрический образ**? Разве в математически правильно построенном п-де [параллелепипеде] мы увидим какую-либо иную форму—шар, конус, цилиндр и т.п. Нет, мы в нем не

of data that dictated both inherent and effective form of the object: dimensions (a parallelepiped with a horizontal projection of 20x20 meters and a height of 30 meters), and the ephemeral conditions of light (sunny) and the spectator's viewpoint (eyes at 1,6 meters from earth; the distance between the subject and the object no more than 30 meters; the spectator was dynamic, but the speed of her movement was no more than 15 meters per second). The students, also had to consider that the movement of the sun could simultaneously illuminate two of the parallelepiped's sides. The assignment asked the student to reveal the following: "1. The direction of surfaces that form the sides of parallelepiped in relation to the coordinate spaces (spatial orientation)... 2. A clear comprehension of ribs. 3. The equality of sides. 4. The relationship of a base side to the height. 5. The regularity of side surfaces. 6. The straightness of angles (i.e. the angles equal 90°)." All these had to be exposed using vertical and horizontal articulations, chiaroscuro, and the character [faktura] of surfaces.[212]

Describing a successful solution, by a student V. Petrov,[213] Ladovskii clarified:

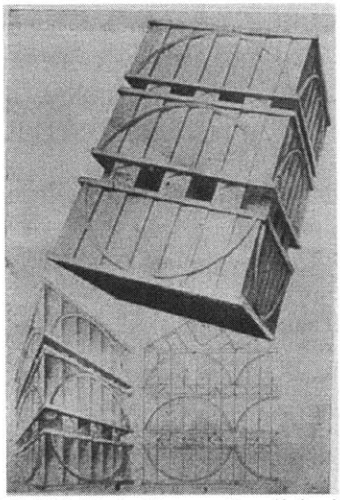
> One must put an identity sign between each pair of parallelepiped sides that are seen simultaneously, that is, between all of its sides.
>
> This means that the articulations of all the sides of the parallelepiped must be identical. If, for example, we inscribe a circumference into each of the parallelepiped's sides in such a way that the spectator could, during the process of perception, define the identity of the diameters of each pair of simultaneously seen circumferences, this would show a certain **degree** of approaching the image to its geometric essence, and would demonstrate clearer the equivalence of distances of separate ribs from the front rib.

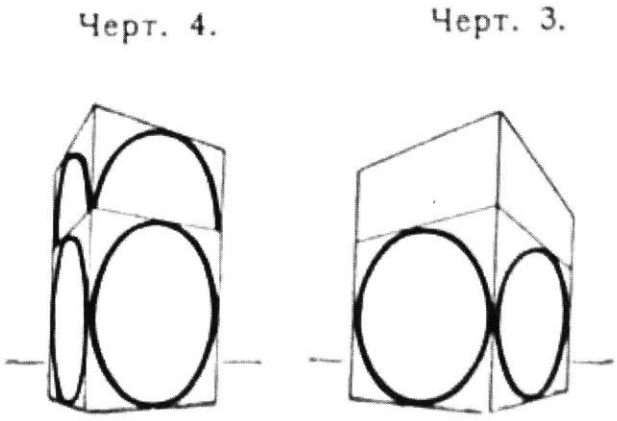
увидим ни шара, ни цилиндра и т.п., но мы также не увидим п-да [параллелепипеда] с теми геометрическими качествами, которые даны в задании».

[212] Nikolai Ladovskii, "Osnovy postroenia teorii arkhitektury (pod znakom ratsionalisticheskoi estetiki)," *Izvestia ASNOVA* No. 1 (1926): 3-5.

[213] Unrelated to A. Petrov, a member of the Working Group of Architects at INKhUK.

Having inscribed additional half-circumferences, we will comprehend the relationship between the base and the height: 1:½, the equality of sides and all its consequences—**everything with a certain degree of approximation**, which can be achieved with the help of these elements.[214]





Figs. 2.6-2.7. V. A. Petrov. Parallelepiped. Abstract Assignment on Exposure of Form. 1920 [left], and Nikolai Ladovskii, Geometrical analysis of Petrov's project [right].

This initial formal idea represented in an abstract assignment was to be given flesh and blood subsequently, when an architect would develop the project and prepare it for a presentation to the client. An industrial assignment, in which considerations of function, technology and construction played a prominent role was naturally quite different in its goals and in the methods

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[214] Ladovskii's emphasis. Ladovskii, "Osnovy postroenia teorii arkhitektury arkhitektury (pod znakom ratsionalisticheskoi estetiki)," 4. Translation by the author. Russian original: «Необходимо поставить знак тождества между каждой парой одновременно видимых сторон п-да [параллелепипеда], следовательно, между всеми сторонами его.

Это означает, что членения на поверхности всех сторон п-да [параллелепипеда] должны быть тождественны.

Если, для примера, мы впишем по окружности на каждый из сторон п-да [параллелепипеда], так чтобы зритель мог при восприятии определить равенство диаметров каждой пары одновременно видимых окружностей, то этим будет дана некая **степень** приближения образа к его геометрической сущности, будет более уяснено равенство расстояний отдельных ребер от переднего ребра.

Вписав еще под полуокружности, мы уясним отношение основания к высоте 1:½ , равенство сторон и все вытекающие следствия, **все в известной степени приближения,** какое могут дать эти элементы».

of its solution from an abstract assignment. For instance, "Parallelepiped" was followed by "Grain elevator" (offered in 1921 and 1922):

> Required: to design an elevator for storage of dry grain, total capacity 31,000 sacks=3,580 cubic meters.
>
> **Technical requirements:** 1). The elevator must be divided into a series of separate cells for storing grain. The latter can have following sections: circular, square, rectangle, triangle, six- or eight-angle. ... The material for cells: brick, iron, reinforced concrete.
>
> 2). The grain is received through pouring reservoirs, where it arrives from railroad cars. It is then elevated by hoists to the attic (upper) storey, where, after going through purifying devices, it is poured down to the separate cells (cameras) of the elevator.
>
> 3). All the spaces of the elevator must have a convenient connection via internal and external staircases.
>
> **Architectural requirements:** It is required, on the basis of the knowledge received from the previous work on exploring form, to expose and express the form of the elevator as a holistic volumetric structure; in order to achieve this, maximal use of various surface and volumetric form and surface [faktura] of separate constituent parts is recommended (Dokuchaev, 1921).[215]

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[215] Nikolai Dokuchaev, "Programma na izuchenie form dlia II-oi gruppy Osnovnogo otdelenia Ob'edinennykh masterskikh VKhUTEMASa," quoted in Khan-Magomedov, *Mikhail Korzhev,* 56-57; Khan-Magomedov, *Ratsionalizm,* 165-167. Translation by the author. Russian original: «Требуется спроектировать силос для хранения сухого зерна, общей вместимостью около 31 000 мешков=3,580 куб. метров.

Технические требования

1. Силос должен быть разделен на ряд отдельных ячеек для хранения зерна. Сечение последних допускается: круглое, квадратное, прямоугольное, треугольное, шести и восьмиугольное.
   ...Материал для ячеек: кирпич, железо, железобетон.
2. Подача зерна от ссыпных резервуаров, куда зерно поступает из железнодорожных вагонов, должна производиться при помощи элеватора на чердачный (верхний) этаж, где зерно при помощи транспортирующих лент, пройдя очистительные приборы, ссыпается в отдельные ячейки (камеры) силоса...
3. Все помещения силоса должны иметь удобное поэтажное сообщение при помощи внутренних или внешних лестниц...

Требования архитектурные

Требуется, на основе полученных знаний из предыдущей работы на изучение формы, выявить и выразить форму силоса как целостного объемного сооружения; для этого желательно максимальное использование возможных плоскостных и объемных форм и фактуры отдельных составных элементов силоса...»

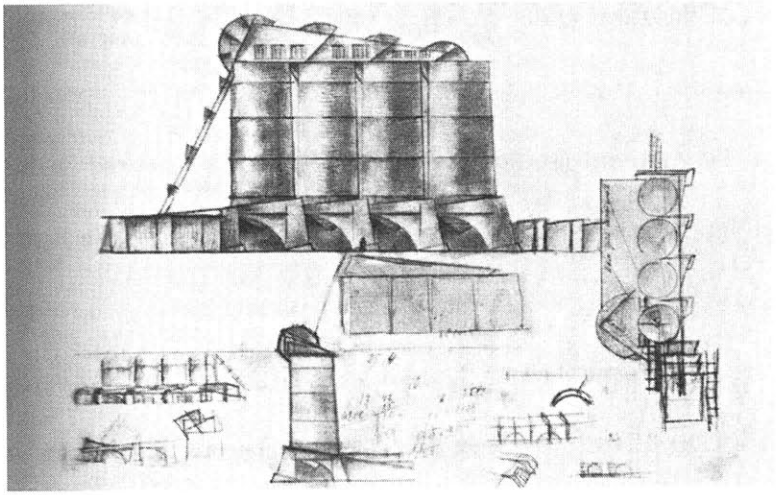

Fig. 2.8. Mikhail Korzhev. Grain elevator. Industrial Assignment on Exposure and Expression of Form, 1922.

The solution of Mikhail Korzhev consisted of eight equal cylinders arranged in two rows, which easily made comprehensible the plan, a 1:2 rectangle. The project relied upon the contrast between rectangles and circles, a contrast that created a tension of dynamism and statics within the composition. On the one hand, the articulations of cylindrical sections made the "façade" of the elevator read as a grid of horizontal rectangles, each segment representing the proportional relationships of the whole structure; at the same time, the diagonals of the pedestal and the loft neutralized each other, conveying a feeling of dynamic monumentality, which was accentuated by a slight—almost unnoticeable—narrowing of the cylinders towards the top. On the other hand, the circles (the wheels on the ladder and on the top, the circle quadrants at the bottom and the curves of the cylinders) emphasized the rotation that lay at the heart of the functional program of the structure, making the beholder feel the movement of the grain from the bottom left, up the conveyor ribbon and then towards the right, following the diminution of the size of the wheels, then abruptly falling down into the elevator and afterwards gradually sacking towards the left, where the circle, as it were, began anew.

If in expressing a geometrical quality, an architect investigated the form's surface, by addressing a physical quality he or she was penetrating deep inside the form: the material, mass and weight; a subcategory of physical, mechanical properties, were related to the forces and

tensions at play in each particular part of the form under the effect of the force of gravity, thrust, and torsion. The mass (consistency, solidity, viscosity, or fragility) of form was to be expressed through a characteristic treatment of the material (something that Tatlin had pioneered in his counter-reliefs), through *faktura* (the character of surface), the spatial openings within the form, and, finally in the form itself. For the expression of weight the Rationalists recommended to use the form (such as a cone standing on its apex), articulations (shorter geometrical division towards the bottom of the form), or the deformation of form (e.g., sagging).[216] Mechanical properties—compression, tension, elasticity, torsion, and shearing—were expressed by the form itself, its deformations, articulations, an exposure of material and its surface treatment.

The most characteristic mechanical property was construction, "an expression of dynamic moments of the work of a system of forces, which are included into the given architectural structure"; since it served to express the coordination and functional subordination of the parts to the whole. An architectural construction, therefore, had to be distinguished from a technical one as a "formal transformation of the system of elements and their forces," that is, an image of mechanical properties ("the functional logic of the system") rather than their employment for the creation of a materially realizable form.[217] As in the case of geometrical properties, the psychological laws of physical properties were determined in the course of experiments: in one, Ladovskii hung an obelisk with its top down to ascertain that it could achieve "quite a sinister expression of a weighing heaviness" (the ensuing law that he discovered stated that in relation to the horizontal plane, on which it rested, an object looked the heavier the closer its center of

[216] Dokuchaev, "Metodicheskaia zapiska," 93-94.

[217] Dokuchaev, "Metodicheskaia zapiska," 95-96.

gravity was located to this plane).[218] In another experiment, he determined that a rectangle with a narrower top and a wider base (a corner at the top of the rectangle was cut and added to the bottom) looked heavier than a regular rectangle with the same surface.

An abstract assignment on physical properties offered in the Rationalist studios in 1922 asked to create an impression of stability in a destabilized form.[219] The students were presented with a vertical parallelepiped leaning at 60° towards the horizon; its center of gravity was beyond the outlines of the base (that is, according to the law of gravity, the parallelepiped had to fall); nevertheless the assignment asked to demonstrate, using compositional means and the deformation of form, that the form was stable. The project of student Arkadii Arkin radicalized the situation, making the volume lean upon a single point. It presented the volume of two cones, one inserted within the other; a series of parallelepipeds placed in parallel to each other was superimposed on top of the cylinders. The ideal horizontality of parallelepipeds created an impression that the whole construction was in a state of stasis, each parallelepiped firmly occupying its place in the hierarchical order. Moreover, enhancing the impression, the parallelepipeds' width increased towards the bottom, while their number multiplied to produce an effect of support.

[218] Khan-Magomedov, *Ratsionalizm*, 121.

[219] Khan-Magomedov, *Ratsionalizm,* 176.

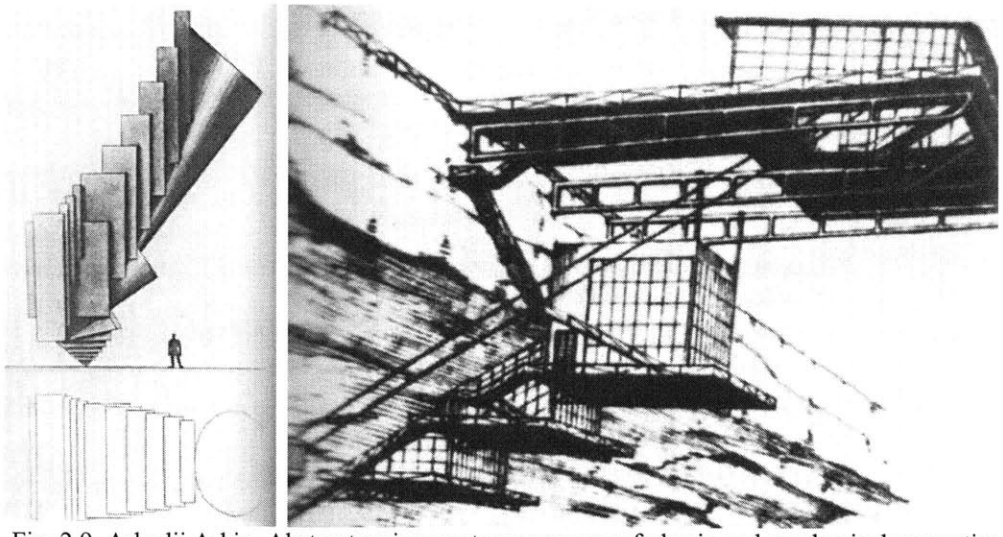

Fig. 2.9. Arkadii Arkin. Abstract assignment on exposure of physic and mechanical properties of form (mass and balance). 1922 [left]. Fig. 2.10. Unknown author. Restaurant above the sea. 1922/23 [right].

A concomitant industrial assignment, given in the academic year 1922/23, asked for the design a restaurant, hanging dangerously from a rocky cliff above the sea, such that visitors would feel safe, experiencing the structure as stable. The assignment stipulated a 30° angle of the cliff, from which the restaurant had to project off as a series of three to seven architectural floors. It also had certain functional requirements: an aerodrome on top of the cliff, and a pier connecting the reataurant with a bus station by means of a leaning elevator; below the cliff, a horizontal building of the sea port had to be placed by the water. Similarly to Arkin, an unknown author of one of the submissions emphasized horizontality designing a structure that appeared as a series of static parallel horizontal volumes rather than as a single dynamic structure. As a result the upper, most boldly projected, tier of the restaurant gave an impression of resting upon the lower ones rather than hanging, as it actually was, from a rock on a single console. Moreover, the restaurant's lower levels, which were not parallelepipeds but prisms, were placed directly below the surface of the rock, which made their tops appear submerged. The entire structure appeared to have grown naturally from the cliff, while the angle of the restaurant continued its natural

angle, returning, as it were, its original shape to nature, which was modified by a vertical slicing the rock's upper part.[220]

The third type of assignments suggested by Balikhin, "Arrangement of surfaces of volumes in space," or simply "the organization of space," dealt with what the Rationalist theory considered to be the very essence of architectural creation. Not a mere container of objects, space, Ladvoskii believed, was at once the "material" and the final project of architectural work. Thus the so-called spatial assignments were the culmination of the Rationalist propedeutic program, given after the assignments on geometrical and physical properties of form had already been mastered. First and foremost they asserted the status of architecture as a discipline based on kinetic and dynamic visual perception.

Towards the mid-1920s Ladovskii moved on to pursue his other interests (first of all, urban planning), leaving the elaboration of the "Space" course to his disciples, the young graduates of VKhUTEMAS. Applying Mach's analysis of experience to the study of architectural perception in the late 1920-s, this first generation of Ladovskii's students, by then already young professors of architecture, engaged in an ambitious project of elaborating a Rationalist theory of composition. After graduating from VKhUTEMAS in 1926, Ladovskii's former students Viktor Balikhin, Mikhail Turkus, and Mikhail Korzhev decided to spend a summer, collaboratively working on this project. The three rented a house in a village Kriushi near Moscow, where, visited by V. Petrov, Iurii Spasskii, and Ivan Lamtsov, they elaborated a classification of compositional elements that included such new (unexplored by Ladovskii)

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[220] Khan-Magomedov, *Ratsionalism,* 177. The project was also published by El Lissitzky in *Russland: Die Rekonstruktion Der Architektur in Der Sowjetunion* (Wien: A. Schroll, 1930).

elements as surface, and metrical and rhythmical rows.[221] This, eventually published by Krinskii, Turkus, and Lamtsov in 1934 as *Elementy arkhitekturno-prostranstvennoi kompozitsii [Elements of architectural-spatial composition]* and was reprinted in the 1960s, remaining a key text book on architectural composition for generations of Soviet architecture students.

While construction, this guiding principle of Constructivism, was reduced to one of the physical properties of form, the notion of composition received in the Rationalist theory a much more prominent place than in the thinking of their rivals. Composition became the principle that united individual forms into a coherent whole and thus served as the principle of creating space, a "system of arranging elements, determining the order of these elements into a whole architectural organism-form (a system, exposing to the spectator the character of subordination, combination, and location of separate elements that comprise an architectural form)."[222] Compositional principles included relationships and proportions, statics and dynamics, and rhythm.

According to Viktor Balikhin, who in 1926-1928 taught a course titled "Organization of space" at VKhUTEMAS, artistic organization was nothing else than a composition in three-dimensional space. Drawing a parallel with the principles of musical composition, Balikhin, Turkus and Korzhev suggested four methods of composition in architecture: 1) relation (juxtaposition of two magnitudes of forms and their elements), e.g., nuance and contrast; 2)

[221] More on "the summer in Kriushi" see Khan-Magomedov, *Mikhail Korzhev*, 84-90. The diary documenting the theoretical work of Balikhin, Korzhev, and Turkus in Kriushi in 1926 has been also published by Khan-Magomedov (*Mikhail Korzhev,* 143-171).

[222] Dokuchaev, "Metodicheskaia zapiska," 83. Translation by the author. Russian original: «...Система расположения элементов, устанавливающая определенный порядок сочетания этих элементов в целый архитектурный организм-форму (система, выявляющая зрителю характер подчинения, сочетания и расположения отдельных элементов, строящих архитектурную форму)».

proportions (relations connecting three and more magnitudes); 3) meter (a row formed by identical forms, recurring with different intervals); and 4) rhythm (a row formed by a transformation of form and interval). As a complex of elements, a composition had to demonstrate unity, that is, a certain permanence of qualities that would allow a beholder to identify it as a form. Unity guaranteed that the complex was a system subjected to the laws and principles of organization and was thus navigable.

As in the theory of music and poetry, in the compositional theory of the Rationalists rhythmical and metrical rows were characterized both by repetition and regularity of elements and intervals: if rhythm dealt with their successive change (increase or diminution), meter was defined by their equality. Metrical rows presented a canvas, a spatial skeleton of a form, analogous to musical bars comprising the base of a melody, while metrical motives were compared to musical chords. Combinations of metrical rows expressed force, serenity, monumentality and scale (examples given by the team included St. Marco and Dneproges). Rhythm, on the other hand, as the law of connection of spatial forms and elements, represented the culminating method of organizing spatial complexes, and could express more lightness (as in the example of Reims Cathedral) and dynamism. Combining various spatial elements (qualities) with the method of their organization, one could achieve an almost infinite variety of rhythmical rows. A combination of several rhythmical or rhythmical and metrical rows produced complex rows with new spatial qualities.[223]

[223] More on rhythmical rows, see Chapter Three of this dissertation.

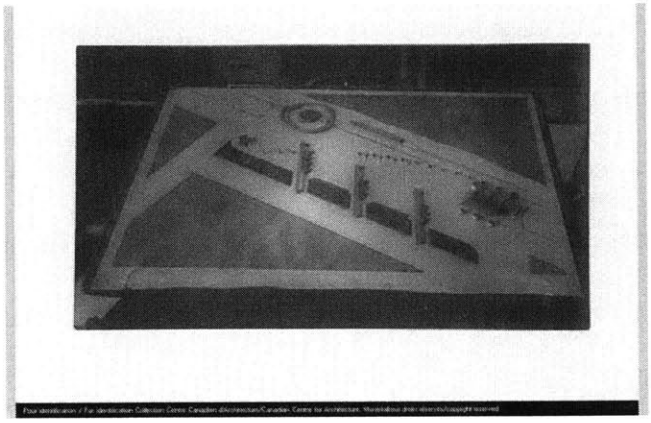

Fig. 2.11. Tatiana Druzhinina, "Expressive Spatial Composition," VKhUTEIN, Moscow, 1929-1930.

An example of a Rationalist student abstract compositional assignment, "Exercise on Creating an Expressive Spatial Design Composition with Architectural Volumes" was submitted by Tatiana Druzhinina in 1929/1930. The model, an abstract arrangement of spatial forms, was an enclosed, united, and dynamic composition. It suggested a diagonal movement, directed towards the compositional center on the edge of the plane, at the intersection of the major diagonal "avenue" and a subsidiary perpendicular route. The central of the three perpendicular blocks in the middle divided the composition into two equal parts, whose symmetry and thus coherence within the whole was guaranteed by the equal distances between the central and the side blocks. The slightly off-diagonal row of horizontal blocks increased the width of the avenue towards the compositional center: together with the greater length of the far left block, for a beholder at the starting point on the right it made the compositional center appear closer than it actually is. Finally, the curve going from the starting point towards the left indicates a possibility of the shift of direction. The assignment organized the movement of the beholder, bringing different forms together in a single coherent environment. It asserted the psychological definition of space, articulated by German psychologist Carl Stumpf: "What we perceive originally and directly is the visual field, the whole visual field… If this continually changes through movement, we retain the disappearing

parts in our minds and unite them with the newly perceived spaces into a whole. Thus, out of many spaces arises one space; this is explained by the continuity of space."[224]

Although simpler Rationalist compositions included those of wall surfaces, the most complex and important of them dealt with large-scale open-air multi-structure complexes and landscapes, which allowed for a dynamic perception: large public parks and, most importantly, urban settlements. This connection of space with movement and, thus, time, led to the appearance of the concept of space-time (famously used in architecture by Siegfried Giedion) as a unified continuum, the spatial and temporal dimensions of which do not exist independently of each other. Likewise, the goal of a Rationalist composition was to create an expressive surface or that made a visitor experience the dimensions and the properties of the environment through walking. The endpoint of movement, imposed by an architect, was architecturally expressed as the compositional center. Such central organization tacitly attracted people to its core, provoking their movement in the desired direction, and thus allowed the composition to fulfill its mission as "dynamics" or "the organization of visual movement in the desired direction."[225]

From revealing the form of a parallelepiped to composing large-scale urban projects, Rationalist pedagogy asserted the value of the energy-saving, immediate, unconscious perception of architectural environments—a perception of ideas imbued into the form by its designer and possibly contradicting imperfect material reality. Rationalist pedagogy asserted the special status

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[224] Carl Stumpf, *Über den psychologischen Ursprung der Raumvorstellung* (Leipzig: S. Hirzel, 1873) 278. Translated into English in Harry Francis Mallgrave and Eleftherios Ikonomou, "Introduction," *Empathy, Form and Space: Problems in German Aesthetics, 1873-1893*, 1-85 (60). Stumpf's 1907 book *Erscheinungen und Funktionen (Phenomena and [psychic] functions)* was translated into Russian in 1913 as Karl Stumpf, "Iavlenia i psikhicheskie funktsii," *Novye idei v filosofii,* Sbornik 4 (St. Petersburg: Obrazovanie, 1913).

[225] For examples of Rationalist spatial projects, see Chapter Three of this dissertation.

of the architect as a master of human mind and as an author of this higher-than-material truth. As the remainder of this chapter argues, this new responsibility led to new demands being placed upon architects, particularly, upon their own psychological and physiological profiles.

Rationalist Psychotechnics

The master who could reveal to a layman the hidden properties of spatial forms and make them legible and unconsciously recognizable, an architect had to possess a particular vision of the world, easily (i.e. while expending a minimal amount of perceptual energy) noticing and analyzing regularities and relationships of formal elements. The eye and its physiological properties thus became a focus of attention for the Rationalists', who explored various methods for its assessment and examination with the goal of developing an objective, scientific explanation of architectural talent. The idea of a special architectural vision, physiologically and psychologically different from that of a lay person, became particularly important for Rationalist pedagogy, where it legitimized the evaluations of students' work as rooted in objective physiological conditions rather than in subjective preferences.

Such a scientific, experimental analysis of architectural vision became the task of the Architectural Research Laboratory [*Arkhitekturnaia nauchno-issledovatel'skaia laboratoria*] within the Architecture Department of VKhUTEIN, opened by Ladovskii in 1927, which was usually referred to as the Psychotechnical Laboratory. Arguing for the necessity of such a laboratory, Ladovskii referred to Hugo Münsterberg, the late German founder of this psychological discipline who had taught at Harvard University: "Psychotechnics cannot create artists... but it can provide all of them with a basis for achieving in the most reliable way those

particular goals to which they aspire and, above all, for avoiding certain pitfalls... A widely developed psychotechnics can, in the future, make its own demands of composers, even if it were constantly confirmed that genius finds unconsciously that which science develops with great effort."[226]

Münsterberg's principles and methodology seem to have been an important model for Ladovskii, who attempted to reconstruct the famous Harvard psychological testing rooms at VKhUTEIN. According to Münsterberg's description, eight of more than forty rooms of his laboratory were "entirely black so that no light may be reflected from their surface."[227] Likewise, Ladovskii managed to acquire within VKhUTEIN a special testing room, which was entirely painted in black (including the floors and the ceilings) to avoid distractions and possible spatial reference points: a contemporary remembered that "the black room produced a whimsical impression, all filled with various devices with stretched threads and bright color spots for the experiments with color. It looked as if it were on fire."[228] Famously, the hired house-painters refused to paint the room and Ladovskii and his associates paint it on their own.

Münsterberg's psychotechnics was based on differential psychology, a study of persistent traits in the psyche that permitted a classification of personality types. His major work on psychotechnics, *Grundzüge der Psychotechnik* [*Fundamentals of Psychotechincs*], written and

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[226] Nikolai Ladovskii "Psikhotekhnicheskaia laboratoria arkhitektury." Selection translated from the Russian by Anatole Senkevitch (Anatole Senktevitch, Jr., *Trends in Soviet Architectural Thought, 1917-1932: the Growth and Decline of the Constructivist and Rationalist Movements.*" Diss., Cornel University, 1974, 335-336); Hugo Münsterberg, *Grundzüge der Psychotechnik* (Leipzig: Barth, 1914) 610.

[227] Hugo Münsterberg, *Business Psychology* (Chicago: La Salle Extension University, 1915) 13-14.

[228] Selim O. Khan-Magomedov, *Georgii Krutikov* (Moskva: Russkii avangard, 2008) 39-40.

published in German in 1914,[229] consisted of two subfields: the first gave predictions about possible changes in the psychic life, while the second explored how psychic life might be altered.[230] The first subfield thus included research on individual physiological and psychological faculties and was conducted in a laboratory with the help of special testing machines. In order to study a complex psychological trait, Münsterberg suggested splitting it into several elementary properties and testing the capacities of a subject on each of these parameters.[231] The second subfield, which studied the way psychology could impact consciousness, explored various forms, stages and degrees of influence, from a one-time manipulation of a person's behavior to a permanent effect upon his or her values.

Although it never saw an English translation, the Russian version of *Grundzüge der Psychotechnik* came out in 1922.[232] Other Russian publications and translations of German texts on psychotechnics quickly followed.[233] Alongside Germany and the USA, psychotechnics

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[229] As the study of psychology's practical use, psychotechnics completed Münsterberg's system of psychological sciences. As such, it followed causal psychology (which studied the content of consciousness) and teleological psychology (which examined actions and associations of psychic life).

[230] G. Miunsterberg [Hugo Münsterberg], *Osnovy psikhotekhniki* [*Foundations of psychotechnics*]. Vol.1 (Moskva: Russkii knizhnik, 1922) 33.

[231] Miunsterberg, *Osnovy psikhotekhniki,* 65.

[232] Albeit spectacular, the psychotechnics' heyday was brief: in 1936, it was declared a bourgeois pseudo-science in the Soviet Union; in 1942, it was banned in Nazi Germany. Stern immigrated to the United States, where Münsterberg had worked from 1897 until his death in 1916, while their Soviet colleagues were subjected to repression. In spite of Münsterberg's recognition in the United States, in the New World psychotechnics never gained an importance comparable to the one it enjoyed in Germany and Soviet Russia. In English, Münsterberg preferred to address his field as "applied psychology," emphasizing the practical benefits that his study could bring to businessmen.

[233] The following works of Münsterberg were published in Russian translations: *Psikhologia* [*Psychology*] (Sankt-Peterburg, 1908); *Psikhologia i uchitel'* (*Psychology and the Teacher*) (Moskva: Mir, 1910); *Soedinennye Shtaty Ameriki* [*The United States of America*] (Sankt-Peterburg: Brokgauz-Efron, 1913); *Amerikantsy* [*American traits : from the point of view of a German*] (Moskva: Tip. A. P. Poplavskogo, 1906); *Osnovy psikhotekhniki* [*The Foundations of Psychotechnics*], vols. 1-2 (Moskva: Russkii knizhnik, 1922-1925); *Sbornik statei po prikladnoi*

became especially popular in the young Soviet Union, which aspired to create a modern industrialized economy. The All-Russian Psychotechnic Society was founded in 1927, publishing a journal and establishing branches in several cities; by 1930, there were more than one hundred psychotechnical institutions throughout the USSR.[234] Like Taylorism and Fordism, the other forms of industrial management, psychotechnics found patronage among the high state and Party officials, one of the most active among whom was Anatolii Lunacharskii. As a result, out of 55 research organizations connected to the Narkompros, Lunacharskii's ministry of culture and education, 24 explicitly dealt with physiology and psychology, while 79 projects of the Narkompros and the ministries of health, labor, and social security were devoted to the study and improvement of socialist workers' physiological and psychological organization.[235] In the 1920s, psychotechnics also successfully penetrated into higher education, where it attempted to replace the old examination system. "Technical giftedness" [*tekhnicheskaia odarennost'*] was a quality that psychologists particularly suggested to be tested in those aspiring to become Soviet technical specialists.[236]

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psikhologii [*A Collection of Articles on Applied Psycholgoy*] (Moskva: Gosudarstvennoe tekhnicheskoe izdatel'stvo, 1922); *Psikhologia i ekonomicheskaia zhizn'* [*Psychology and Economic Life*] (Moskva: Sovremennye problemy, N. S. Stolliar, 1924).

[234] As a science of labor management, psychotechnics competed with Taylorism. In 1920, the famous Soviet proponent of Taylorism, Alexei Gastev, founded the Central Institute of Labor (Tsentral'nyi institut truda) for the research in the newly created field of the Scientific Organization of Labor (nauchnaia organizatsia truda). It was within the umbrella of this institute where Isaak Spielrein opened the first psychotechnical laboratory. If Taylorism suggested a mechanistic reduction of the human body and psyche, psychotechnics exhibited a biological determinism, postulating the innate inequality of people's abilities.

[235] Margarete Vöhringer, *Avantgarde Und Psychotechnik: Wissenschaft, Kunst Und Technik Der Wahrnehmungsexperimente in Der Frühen Sowjetunion*(Göttingen Wallstein, 2007) 8-39.

[236] S[olomon] Gellershtein, "Psikhotekhnika i komplektovanie vuzov" ["Psychotechnics and the selection of university students"], *Krasnoe studenchestvo* [*Red Studentship*] No. 28 (1929): 34-41.

Following these trends in Soviet psychology, Ladovskii saw an important role of his Psychotechnical Laboratory in architectural education, endowing it with several missions. First, it was to deal with the analysis of the elements of architecture and their interaction, studying their effects upon the psyche, and to conduct experimental testing in spatial disciplines that utilized these elements. Second it was to study the connection of architecture with society, economy, and technology, focusing on such problems as the impact of architecture on everyday life, functionalism, standardization, and NOT (the scientific organization of labor). Finally, the Laboratory was to study questions of architectural pedagogy and psychotechnics. This third set of questions, which was centered around the evaluation of students' abilities, was the foremost focus of the Laboratory and served the foundation for research in the other two areas. Ladovskii himself, with the help of his former student Georgii Krutikov, was in charge of the psychotechnical section. While it also explored the attitudes and peculiarities of the spatial perception of architectural consumers, treated as professional and social groups (workers, students, white-collar workers, etc.) with the help of psychological questionnaires, the focus of the Laboratory was the physiological suitability of architecture students to their professional roles, which was tested with help of specially construed apparatuses and tests, partially borrowed from psychotechnical literature and partially designed by Ladovskii's collaborators.[237] Ladovskii explained: "So many misunderstandings stemming from the lack of terminology could the laboratory eliminate in the evaluation of the quality of architectural work. The arbitrariness of

[237] Georgii Krutikov, "Arkhitekturnaia nauchno-issledovatel'skaia laboratoria pri Arkhitekturnom fakul'tete VKhUTEIN" ["Architectural research laboratory within the Architecture Department of VKhUTEIN"], *Izvestia ASNOVA* No. 1 (1926): 2-4.

judging competition entries is notorious. Only when the laboratory functions properly can the misunderstandings between the pedagogues and the students finally be eliminated."[238]

Ladovskii found an objective way of evaluating students' work—a scientific correlate of architectural talent—described by the Rationalists as a capacity for "seeing" architecture, in the psychological notion of eye-balling, *glazomer* (German *Augenmaß*), a frequently tested parameter in psychotechnics. According to *Brockhaus' Conversations-Lexikon* that came out shortly before Münsterberg's *Grundzüge*, eye-measuring, as the faculty of estimating the magnitude of distance, angle, mass, space, and other properties without special instruments, found many applications in practical life of people. It was important for butchers, who needed to cut the required measure of meat, as well as for land surveyors, engineers, the military, draftsmen, painters, sculptors, and, of course, architects.[239] Thirty years later, the definition of eye-measuring as precision peculiar to architectural work was repeated by a Jugendstil architect August Endell: "The so-called "measuring by eye" [*Augenmaß*] makes it possible to judge relationships of scale through feeling, and one knows how extraordinarily precise this can be. ... And those who have lived among painters and musicians know how well they communicate through inflection, gesture, and so on, despite of the impossibility of an exact description."[240]

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[238] Nikolai Ladovskii "Psikhotekhnicheskaia laboratoria arkhitektury (v poriadke postanovki voprosa)," *Izvestia ASNOVA* No. 1 (1926): 7. Translation by the author. Russian original: «Сколько недоразумений лаборатория могла бы устранить при оценке качеств архитектурной работы из-за отсутствия общеобязательной терминологии даже в среде специалистов. Случайность оценки конкурсных проектов общеизвестна. Страсти возникающие между педагогами и учащимися на почве взаимного непонимания, не могут быть устранены до правильной постановки работы лаборатории».

[239] *Brockhaus' Conversations-Lexikon: Allgemeine Deutsche Real -Encyklopa¨die* 13th ed., vol. 2 (Leipzig: F.A. Brockhaus, 1882) 193.

[240] August Endell, "Architektur-Theorien," *Neudeutsche Bauzeitung* 10 (1914): 54. Quoted in Zeynep Çelik Alexander, *Kinaesthetic impulses,* footnote 73. On the question of "measuring by eye" or "visual discrimination,"

Substituting artistic talent, the eye, as a measuring and analytical device, became a crucial instrument of architectural work. The muscles of an architect's eye were to be no less trained than the muscles of a factory worker's hand, and just as the movements of an experienced worker were precise and measured, so was the eyesight of an architect. Thus all the psychotechnical apparatuses that Ladovskii invented and installed in the Laboratory were designed for measuring *glazomer*, this basic unit of the evaluation of artistic giftedness. *Oglazomer* (from the word *ob'em*, volume) tested the ability to evaluate volume; *ploglazomer* (from the word *ploskost',* surface) served for surface values; *liglazomer* (from *linia*, line) measured the capacity to estimate linear values; while *uglazomer* (from *ugol*, angle) tested the faculty of estimating an angle and the degree of horizontality or verticality of a line. The simplest of Ladovskii's psychotechnic devices, *liglazomer*, consisted of a freely hanging ruler turned with its back side towards the subject. The person was asked to mark the required length on the ruler with the help of a slide, and the magnitude of his or her mistake was evaluated by the scale on the ruler's other side. The slide in *ploglazomer* was a sheet of glass marked with lines. Using the slide, the subject was asked to cut a certain part of the flat figures under the glass, and the degree of precision was evaluated by folding scales. *Oglazomer* used utilized the surface of water, which filled geometrically-shaped vessels, while the graduated cylinders, from which the water flowed, served as the scale demonstrating the degree of precision. Finally, *uglazomer* consisted of a vertically situated rotating circle, which could be turned to mark an angle of a certain magnitude; the results were checked by using the scale on the circle's back side.

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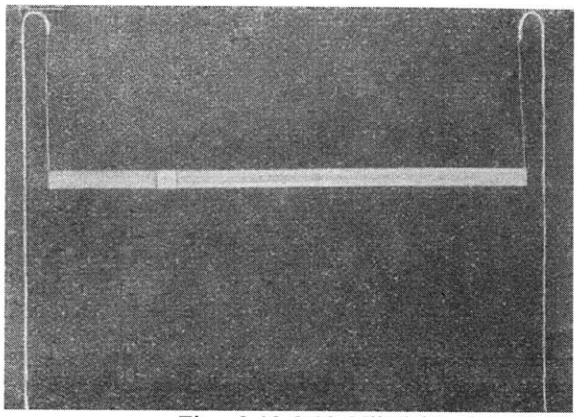
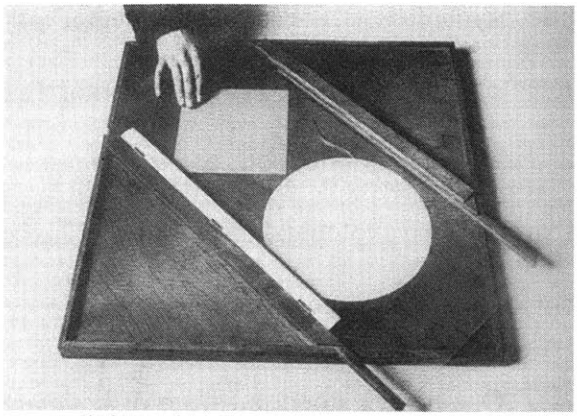
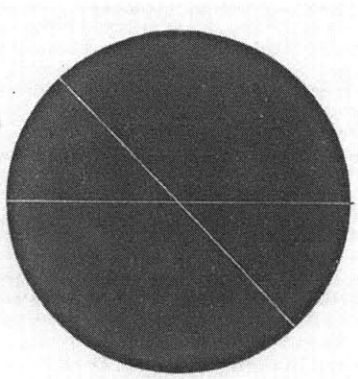
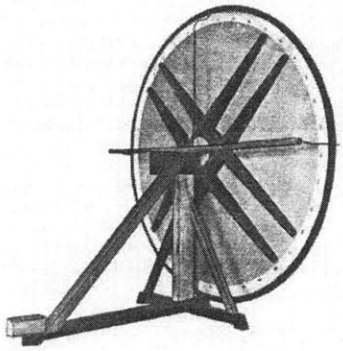
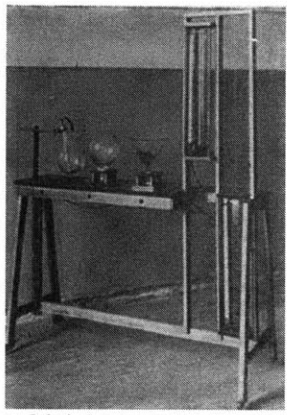
see Theodor Lipps, "Die empirischen Täuschung des Augenmasses," *Zur Einfühlung (*Leipzig: Wilhelm Engelmann, 1913) 359–379.

Figs. 2.12-2.13. Nikolai Ladovskii, Liglazomer [left], and ploglazomer [right].

Figs. 2.14-2.15. Nikolai Ladovskii, Uglazomer [left], and oglazomer [right].

The machines invented by Ladovskii were based on similar psychotechnical apparatuses designed by professional psychologists (most importantly, McCorry and Nikolai Levitov) for vocational testing.[241] Particularly similar to *liglazomer,* one of these apparatuses, which was used for testing *glazomer* of tram and bus drivers, presented a four-meter horizontal ruler fixed one meter below the ceiling; an arrow, moving parallel to the ruler, allowed for the division of the ruler into segments. The subject was asked to divide the ruler into two, three, or four equal parts,

[241] See, for instance, N[ikolai] D. Levitov, "Problemy, metody i osnovnye vyvody issledovania po difpodboru v FZU po kholodnoi obrabotke metalla" ["Problems, methods and main conclusions of a research on differentiated selection of students for factory schools specializing on cold metalworking"], *Differentzial'nyi podbor v shkoly FZU metallopromyshlennosti* [*Differentiated selection of students for metal industry factory schools*] (Moskva: NII Okhrany zdorov'ia detei i podrostkov, 1935) 5-59 (22-23).

while psychologists measured the degree of his or her visual precision.[242] What Ladovskii's Laboratory thus aimed to achieve was not a novel, idiosyncratic approach to architectural work, but rather an introduction of architecture into the sphere of established psychotechnical research—a psychological discipline that had confined itself to the study of manual and technical labor, avoiding the question of whether or not physiological characteristics impact creative work.

One device stood out from of Ladovskii's other measuring apparatuses.[243] The only one that did not have the word *glazomer* in its title, it served not only for evaluating students' capacities but also for furthering architectural theoretical research. This device, *prostrometr* (from *prostranstvo*, space), as its name implies, measured space itself and was designed for "an experimental testing of spatial disciplines."[244] The device consisted of two identical pairs of transverse surfaces on which objects could be positioned in a variety of ways. The two horizontal surfaces could change the angle of incidence, whereas the vertical surfaces were fixed, making a screen that prevented the subject from evaluating the incidence angle. The subject was to occupy a fixed position in front of a rectangular binocular frame exactly on the axis of the boundary

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[242] A. I. Tupikova-Fraishtadt, "Apparat dlia ispytania lineinogo staticheskogo glazomera" ["Machine for testing linear static *glazomer*"], *Voprosy somaticheskogo i psikhotekhnicheskogo profpodbora voditelei mestnogo transporta* [*Questions of somatic and psychotechnical professional selection of drivers of local transport*]. (Leningrad: Transportnoe upravlenie Lensoveta, 1936) 195-196.

[243] A report on the activity of the Laboratory mentioned another "machine for testing spatiality [prostranstvennost'], ponderability [vesomost'] and balance; [a machine] giving possibility of visual comparison of architectural projects in regards to the above-mentioned qualities." As no evidence of this machine has been preserved, its appearance and working principle are unclear apart from the fact that, just like prostrometr, it was based on the principle of comparison and was the closest to fulfilling Ladovskii's dream of objectifying the task of evaluating students' projects. See Khan-Magomedov, *Ratsionalizm,* 371.

[244] G[eorgii] Krutikov, „Arkhitekturnaia nauchno-issledovatel'skaia laboratoria pri Arkhitekturnom fakul'tete Moskovskogo Vysshego Khud.-Tekhnich. Instituta" ["Architectural research laboratory within the Architecture Department of Moscow High Art-Technical Institute"], *Stroitel'naia promyshlennost'* [*Construction Industry*] No. 5 (1928): 372-375 (374).

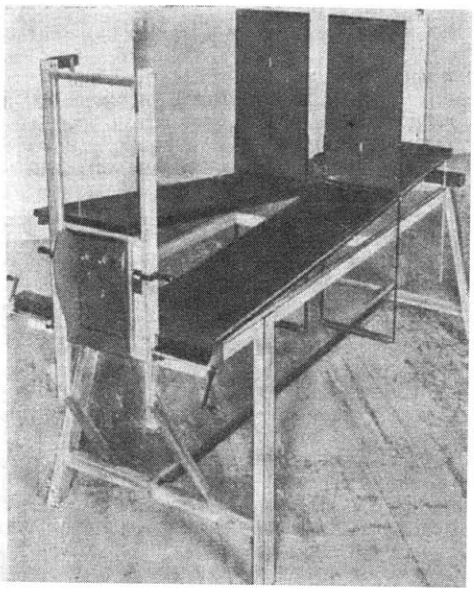

Fig. 2.16. Nikolai Ladovskii, *Prostrometr.*

between the two horizontals, so that she could not evaluate the degree of the surfaces' incidence, while a system of scales measured analyzed magnitudes. In one of the tests, the researchers put geometric figures on both horizontal surfaces and asked the subject to evaluate their spatial depth, determining which of the left figures was equally distant from the screen as the selected figure on the right.[245] Responding to Munsterberg's physiological approach to *Augenmaß* no less than other Ladovskii's apparatuses, *prostrometr* depended on contrast and comparison, asserting them as the principles of the construction of space.

Comparison, indeed, had been singled out by physiologists as one of the most important constituents of *glazomer.* Levitov believed that the processes of comparison, differentiating, and evaluation have a special importance for the function of *glazomer.*[246] Likewise, summarizing the achievements of contemporary physiology in the 1940s, a then-leader of Soviet physiology Sergei Kravkov (who in the 1920s had taught a course on visual perception at VKhUTEMAS) could define *glazomer* as "a faculty of the eye to compare spatial magnitudes."[247] Mach, too, had believed that scale [*Maßstab*], although was inherently being inherently a comparison of external bodies, was nevertheless based on human perception: all standards and measurements could

[245] Khan-Magomedov, *Ratsionalizm*, 369-370.

[246] N[ikolai] D. Levitov, "Problemy, metody i osnovnye vyvody issledovania po difpodboru v FZU po kholodnoi obrabotke metalla," 22.

[247] Sergei Kravkov, *Glaz i ego rabota* [*The Eye and Its Work*] (Moskva: Izd. Akad. nauk SSSR, 1945) 292.

likewise be traced back to a physiological comparison.[248] Aesthetic thinkers also defined *glazomer/Augenmaß* as a comparison, or in the language of architectural theory, as spatial relationships. As harmonic relationships between elements formed the essence of architectural composition, *Augenmaß* was recognized as the most important talent of an architect, just as musical ear was a necessary requirement of a composer. Eduard von Hartmann, the author of the first theory of the unconscious, had already in 1886 asserted that *Augenmaß* for architects and musical ear for the composers were of equal importance, but if *Augenmaß* had a relational, comparative quality, the musical ear had an immediate character. Architecture, he argued, was perceived by *Augenmaß* as an understanding of relationships between objects, while music was perceived by musical ear directly, as a pleasing or displeasing sensation.[249] Comparison was also recognized as a decisive factor in the formation of a spatial image in psychophysiological aesthetics. According to Hildebrand, it allowed the mind to organize separate spatial objects into a coherent picture, to establish relationships between them, and to organize space through these relationships: "...The image, as appearance, consists of a complex of contrasts that—if we are to receive a truly living image of real spatial nature—must singly and collectively stimulate the idea of form and space. The unity of appearance... consists of the interaction of contrasting factors and their combined ability to evoke the appearance of a spatial whole."[250]

Pictorial impression, for Hildebrand, created a relative standard of measure, against which other measures were compared. In order to understand a form, that is, to create a visual

[248] Mach, *Analysis of Sensations*, 343.

[249] Eduard von Hartmann, „Die Stellung der Baukunst in der modernen Ästhetik," *Westermanns Illustrierte Deutsche Monatshefte* (1886): 743-760 (744).

[250] Hildebrand, "The Problem of Form," 241.

idea, one mentally transformed all actual dimensions into relative ones. In 1908, in an article entitled "A contribution to understanding of artistic connections of architectonic situations" (*„Beitrag zum Verständnis des künstlerischen Zusammenangs architektonischer Situationen"*) Hildebrand moved from an analysis of individual buildings to an examination of their mutual visual effects upon each other.[251] For Hildebrand, as for Mach and other authors, *Augenmaß* was the faculty of the estimation of dimensions of objects through comparison of their spatial magnitudes and was, thus, closely connected with the concept of scale, or *Maßtab*. Literally meaning "a measuring yard" in German, the word "*Maßtab*" in both German and Russian (to which it was transliterated from German as *masshtab*) referred to a module, a unit of comparison.

The notion of *Maßtab* first appeared in the context of psycho-physiological aesthetics in Hermann Maertens's book *Der optische Masßtab oder die Theorie und Praxis des ästhetischen Sehens in den bildenden Künsten* [*Optical Scale, or the Theory and Practice of Aesthetic Seeing in Fine Arts,* 1877]. Maertens was the first to treat an optical *Maßtab* as a psychological phenomenon distinct from the actual dimensions of a building: he was interested in the influence of the distance between an observer and a building upon the building's perceived qualities, and determined that a building had to be viewed at a 27° angle, whereas a 45° angle allowed the eye to dissolve in details, and an 18° angle caused the image to dissipate within the environment.[252]

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[251] Adolf von Hildebrand, „Beitrag zum Verständnis des künstlerischen Zusammenangs architektonischer Situationen," *Raumkunst* No. 19 (1908).

[252] Hermann Maertens, *Der Optische-Maassstab, oder, Die Theorie und Praxis des ästhetischen Sehens in den bildenden Künsten* (Bonn : Max Cohen & Sohn, 1877). For a discussion of Maertens's book, see Albert Erich Brinckmann, „Der Optische Maßtab für Monumentalbauten im Stadtbau," *Wasmuths Monatshefte für Baukhunst* Heft 2 (1914): 57-72 (57); Ákos Moravánszky, "The optical construction of urban space: Hermann Maertens, Camillo Sitte and the theories of 'aesthetic perception'," *The Journal of Architecture* Vol.7, No.5 (2012): 655-666.

The focus of Maerten's interest was the building in and of itself, which he treated as "a small world of its own" without consideration of its surroundings which he believed could only obscure its proper evaluation.

In 1914, art historian and critic Albert Erich Brinckmann developed the notion of *Maßtab* by elaborating Hildebrand's parenthetical idea that optical *Maßtab* could be used for an analysis of buildings' visual proportional relationships within an urban environment. In his article *"Der optische Maßtab für Monumentalbauten im Stadtbau"* ("Optical Scale for Monumental Structures in City Planning") Brinckmann introduced into urban theory a new set of notions, such as the visual effect of buildings' *Maßtab* upon each other and the *Leitlinie*, or the optical transition between two different architectural scales, an expression of *Maßtab* through an articulation of the surface of a building.[253] For both Hildebrand and Brinckmann, an urban *Maßtab* as the standard of measuring was conditioned by the habitual forms of everyday life: the Castel Sant'Angelo, for example, was perceived in all its magnitude only because of a small town that grew on its top.[254]

Dokuchaev recommended Brinckmann's article to architectural students and pedagogues, and the ideas expressed in it came to play an important role for the Rationalist architectural theory. Like Brinckmann, the Rationalists were interested in a building not as an isolated phenomenon, but as an element of a spatial ensemble, thus *Maßtab* was transformed in their theory into an instrument of compositional arrangement. However, while the German theorists

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[253] Brinckmann, „Der Optische Maßtab für Monumentalbauten im Stadtbau.". Brinckmann's article was cited by Dokuchaev in „Metodicheskaia zapiska," 97.

[254] Hildebrand, "K ponimaniu khudozhestvennoi sviazi arkhitekturnykh situatsii" [„To an understanding of artistic connection of architectural situations"], Gil'debrand, *Problema formy v izobrazitel'nom iskusstve,* 157 [original German publication, *Raumkunst* No.19 (1908)].

spoke of *Maßtab* as a predominantly subjective category of architectural perception, Rationalist theory emphasized a different aspect of the word's meaning—that of measuring. In other words, the Rationalists strived to clarify and conceptualize the notion of *Maßtab* by differentiating its two different senses: that of "a standard of measuring the real dimensions of a building" (actual *Maßtab*) and that of "a standard of measuring the perceived dimensions of a building" (optical *Maßtab*); it was the latter that predominantly interested the Rationalists.[255] Brinckmann and Hildebrand had suggested comparing forms of monumental architecture to the habitual dimensions of everyday life but the Rationalists rejected this approach, expressing the scale of architectural form as a proportional relationship of its parts, which in turn were apprehended through their comparison with proportional relationships within a human body.[256] Thus Ladovskii's article on "Sky-scrapers of the USSR and America" in *Izvestia ASNOVA* asserted that *Maßtab* was the central architectural problem of sky-scraper construction, and argued that neither German nor American architects could satisfactorily solve this problem, the first being too idealist and "psychological" (here, Ladovskii obviously targeted Expressionist architects), the second, on the contrary, forgetting about the person and creating proportional relationships within the building by using a window-frame as a standard of measure.[257]

Lissitzky's photomontage on the last page of the same newspaper issue further explored the notion of *Maßtab* as a measuring device and a function of human perception. Paraphrasing Protagoras, it declared, "Man is the measure of all tailors. Measure architecture with

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[255] Dokuchaev, "Metodicheskaia zapiska," 97.

[256] Dokuchaev, "Metodicheskaia zapiska," 84.

[257] Enael' [Nikolai Ladovskii], "Neboskreby SSSR i Ameriki," 5-6.

architecture" [Chelovek—mera vsekh portnykh… Arkhitektury mer'te arkhitekturoi].[258] The full manifesto-like text, which accompanied images, read:

> Man is the measure of all tailors
> [Our] great-grandmothers believed that the Earth is the center of the world,
> And the man is the measure of all things.
> [They] said about these objects:
> "What a mighty giant!" [photograph of a skyscraper, which was initially juxtaposed to a photograph of Aleksandr III's statue][259]
> And this is even now com-
> pared with nothing else but
> a fossilized animal [photographs of an iron construction and of a fossil skeleton]
> Compare this neither
> with bones, nor with meat [montage of dirigibles and an iron construction]
> Learn to see that which is
> in front of your eyes,
> Directions for use:
> Throw [your] head back, lift the paper, and then you will see [collage with dirigibles]
> Here is the person, the measure of a tailor [montage with a pattern]
> But measure architecture with architecture. [photograph of a sky-scraper in a perspective]."[260]

The enigmatic message of the collage has inspired various interpretations.[261] To understand it, one has to refer not only to the context of ASNOVA VKhUTEMAS pedagogy, but

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[258] *Izvestia ASNOVA,* 8.

[259] See Vöhringer, *Avantgarde Und Psychotechnik*, 44-48.

[260] *Izvestia ASNOVA,* 8. Translation by the author. Russian original:
«Человек мера всех портных
Прабабушки верили, что земля центр мира, а человек мера всех вещей.
Про такие вещи говорили "Какой могучий великан!"
А такое и сейчас сравнивают не иначе, как с ископаемым животным.
Не сравнивайте это ни с костями, ни с мясом.
Научитесь видеть то, что перед вашими глазами.
Вот человек—портному мера,
А Архитектуру МЕРЬТЕ Архитектурой».

also to Lissiztky's other work. In "A. and Pangeometry" (1925), Lissitzky revealed that the phrase "Man is the measure of all tailors" belonged, in fact, to Hans Arp, Lissitzky's friend and associate during his Swiss sojourn, and was pronounced by Arp at the first Dada event in Zurich as early as 1916.[262] In an early essay "The measure of all things" ["Das Mass aller Dinge"] Arp accused humankind of attempting to order the whole universe according to its own standards,

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[261] The opponents of ASNOVA, especially after the Soviet cultural turn of the mid-1930s, suggested to read it as a summon to *l'art pour l'art*, a declaration of a complete separation of architecture from the economic and political realities of the country. See R. Ia. Khiger, *Puti arkhitekturnoi mysli [Directions of Architectural Thought]* (Moskva: OGIZ-IZOGIZ, 1933) 49, whereas contemporary scholars have tried to suggest more sympathetic interpretations of the collage.

German scholar Margarete Vöhringer saw the clue to its meaning in the arrow that points to the envelope with the pattern and a picture of a boy in the low right corner, above an inscription "This is the person, the measure of all tailors." The image, which Vöhringer because of the pointing arrow believed to be the key one for the whole collage, spoke not about measuring the world through a person, but, on the contrary, about measurable and measured human. Only those who challenged their perception, went on with her interpretation Vöhringer, could see how small a person in fact was. As for architecture, it "follows its own laws,... sets its own scales [Maßstäbe], and grows, as [does] technology, way beyond the person [weit über den Menschen hinaus]." Moreover, "Not technology, but only the measuring of people makes this incomparable architecture possible. Because how, when not through a knowledge of the laws of human perception, could these [laws] be set in motion in architecture?" Architecture, for Vöhringer, canceled a Renaissance exaltation of the role of man, revealed to people their dwarf scale, and opened in front of them the magnificence of the universe. Although an assault on Renaissance humanism was definitely a part of Lissitzky's message, Vöhringer's interpretation, it seems, leads to far from Lissitzky's major point, the measurement of architecture, leaving the meaning of the collage's headline unexplained. See Vöhringer, *Avantgarde und Psychotechnik,* 44-46.

A different interpretation of the collage was suggested by the late Russian scholar of avant-garde architecture Selim Khan-Magomedov. The collage, Khan-Magomedov believed, dealt not with the tasks of architecture, but with the architectural idea [obraz]. "Lissitzky's photomontage is constructed in such a way that it included the images of architectural engineering objects, which, as [the collage] says, should not be seen as a reflection of habitual architectural ideas; rather, an architectural idea [arkhitekturnyi obraz] should be seen as architectural means of expression, and it is through these means that the power of the impact of a work [of architecture] should be measured." Khan-Magomedov believed that what was measured in architecture was the strength of the psychological effect, while the whole architectural image had to be perceived akin to a Rationalist student exercise, as a demonstration of architectural means of expressivity. Such a reducing the role of architecture to a statement of its own possibilities (in fact, not too distant from *l'art pour l'art*), left the meaning of Lissitzky's slogan unexplained. See Selim O. Khan-Magomedov, *Lazar' Lissitzky (*Moskva: Russkii Avangard, 2011) 239.

[262] El Lissitzky, "A. and Pangeometry," *El Lissitzky: Life, Letters, Texts* (Greenwich, Conn: New York Graphic Society, 1968) 348-353 (348).

which resulted in chaos and madness. Attempting to subordinate the world, man ruined both the world and himself:

> Man behaves as if he had created the world and could play with it. Pretty much at the beginning of his glorious development he coined the saying that man was the measure of all things. Then he quickly went to work and turned as much of the world as he could upside down. The Venus de Milo lies shattered on the ground. Man has measured with the measure of all things, himself, measured and presumed [*Mit dem Mass aller Dinge, mit sich selbst, hat er gemessen und sich vermessen]*. He has tailored and pruned away all beauty. This cutting to measure gave rise to a fashion shop, the fashion shop gave rise to madness in all its forms. Confusion, unrest, nonsense, insanity and frenzy dominate the world. Foetuses with geometric double heads, human bodies with yellow hippopotamuses heads, fan-shaped monsters with trunks like elephants, stomachs with teeth on crutches, corpulent or emaciated pyramids with dragging feet and tears in their eyes, clods of earth with sex organs, etc., have appeared in painting and statuary.[263]

In the same spirit, Lissitzky replaced rational cognition with animal-like, intuitive means of orienting oneself in reality. The chief among them was the category of seeing. "Seeing, of course, is also an A." [*„Das Sehen ist nämlich auch eine K.*"] was the epigraph of "A. and Pangeometry." By the time Lissitzky wrote these words, the notion of seeing in German aesthetic thought had a long and rich historiography. "Aesthetic seeing" [*ästhetisches Sehens*] was used by Maertens, who distinguished it from a profane seeing, which did not allow for the evaluation of optical *Maßstab*. Later, "looking at" [*das Sehen*] as an unconscious artistic way of perceiving the world was analyzed by Wölfflin as a key to an explanation of the changes of style in the history

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[263] Jean Arp, *On My Way: Poetry and Essays, 1912-1947*, transl. Ralph Manheim (New York: Wittenborn, Schultz, 1948) 35.

In another essay, Arp clarified his position putting his aphorism into the context of Dada anti-rationalism and absurdism. Measuring everything with a human as a standard, for Arp, was a manifestation of the mind's assault against nature, which went against the principle of life. Instead, "He was no longer to be the measure of all things, no longer to reduce everything to his own measure, but on the contrary, all things and man were to be like nature, without measure." This is why Dada argued against rationality and for the return to nature: "Dada is for the senseless, which does not mean nonsense. Dada is senseless like nature. Dada is for nature and against art. Dada is direct like nature. Dada is for infinite sense and definite means." Arp's Dadaist irrationalism was no mysticism, but rather the evolutionist unconscious as a non-cognitive, animal-like "going the right way."

of art and one of the parameters according to which he constructed his famous oppositionary pairs (*das Sehen*, for example, could be "linear" or "painterly").[264] As a more active notion, *das Anschauung*, the idea was picked up by Brinckmann, who called for a development of *Anschauungstheorie*, a general system of ways of seeing.[265] Lissitzky's ASNOVA collage similarly asserted seeing as a special tool of an artist's or architect's work: "Learn to see that which is in front of your eyes, Directions for use: Throw [your] head back, lift the paper, and then you will see [*uvidite*]." Here "seeing" [*videt'*] meant a reception of the world, its internalization by the subject's consciousness. This interpretation of seeing as an act of mind rather than that of the eyes, stemmed, perhaps, from the differentiation between the Russian verbs to look at, *smotret'*, and to see, *videt'*. In 1926, ASNOVA's most outspoken theoretician Nikolai Dokuchaev claimed that "an architectural pedagogue... first of all has to attend to teaching a student **to look at** [*smotret'*] an object and, having explained the basic principles of our perception, **to see** [*videt'*] the most characteristic for the object—what it consists of and how its elements are united into a coherent architectural milieu."[266] If this first notion, *smotret'*, borrowed from the German-language theory, was physiological and intuitive (although subject to training and control), the second, *videt'*, added by Dokuchaev, referred to a conscious, cognitive act.

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[264] Heinrich Wo¨lfflin, *Kunstgeschichtliche Grundbegriffe: Das Problem Der Stilentwicklung in Der Neueren Kunst* (Mu¨nchen H. Bruckmann, 1921) 11-12.

[265] Albert E. Brinkmann, *Plastika i Prostranstvo kak osnovnye formy khudozhestvennogo vyrazheniia* [*Plastics and Space the Main Forms of Artistic Expression*] (Moskva: Izd. Vsesoiuznoi Akademii Architektury, 1935) 11.

[266] Dukuchaev, "Poiasnitel'naia zapiska," 79. Dokuchaev's emphasis. Russian original: Внимание преподавателя архитектуры, как и преподавателя всех пространственных искусств, прежде всего должно быть обращено на то, чтобы научить учащегося **смотреть** на изучаемый объект и, сообщив основные принципы нашего восприятия,--научиться **видеть** наиболее характерное для данного объекта: из чего он состоит и как его элементы слагаются в целую архитектурную среду.

As *videnie* (seeing) dealt with the mental organization of architectural objects, that is, establishing relationships between them, *Maßstab* became one of its important instruments. A system of proportional relationships between objects, *Maßstab* was based on comparing objects to the one chosen as the module, which had been traditionally defined as a human being. It was against this humanization of urban *Maßstab* that Lissitzky's collage protested. When *Maßstab* was specified not according to the dimensions of a body, but by architecture itself, buildings stopped looking colossal and the human no longer appeared as a dwarf. Only when architecture was looked at not from the habitual human perspective but in the way it itself dictated, and when man did not impose on it his standard on it (the false rationality of Arp), could one really *see* architecture, that is, understand how the modern city is organized.

It was this concept of "seeing" as understanding organization that was expressed by Lissitzky in the photomontage. In order to "see" architecture, that is, to understand its organization, Lissitzky suggested changing the conditions of our perception—the viewpoint. It was the "great-grandmothers'" isolating distant viewpoint (Maertens's ideal 27° angle) that produced phantasmagorical transformations of architectural forms into people and animals.[267] Instead, Lissitzky (as well as Rodchenko, who around the same time started making his famous

[267] Devoid of a context, a building could dramatically change its optical *Maßtab*, undergoing miraculous, phantasmagorical transformations. This phantasmagorical potential of optical an optical isolation of a building was noticed by Hildebrand, who evoked an effect of bewilderment not unlike the experience of walking through a night forest, which made one feel a dwarf surrounded by mysterious, gigantic mountains and castles. This effect, according to Hildebrand, was employed by Gothic architecture, which operated with repetitions of major architectural elements on a small, decorative scale or, sometimes, in various scales, as with the decorative turrets of various sizes in Milano Cathedral. Without dismissing the Romantic "fascination of the dim, the incomprehensible," this "breathe of the world of the unreal," Hildebrand confined it to architectural imagination, "because it is characterized by the preservation of architectural form," whereas sculpture, for him, demonstrated an opposite tendency—an enlargement of decorative details to a scale of architectural elements, illustrated by an inflation of decorative volute in Renaissance churches." Hildebrand, "Koe-chto o znachenii razmerov v arkhitekture" [„Einiges über die Bedeutung von Grössenverhältnissen in der Architektur"] (*Pan*, 1899), Gildebrand, *Problema Formy,* 122-123.

urban photography) proposed looking at modern architecture from an almost 90° point of view. Only from this perspective could a beholder "see" architecture by entering into an immediate psychological relationship with it, a relationship that positioned one vis-à-vis the object, allowing one measure its properties by recording her own physiological response. For Lissitzky, the person was not a standard of measure ("the measure of all tailors"), but a measuring subject, who evaluated architecture by comparing her own physiological responses to different buildings.

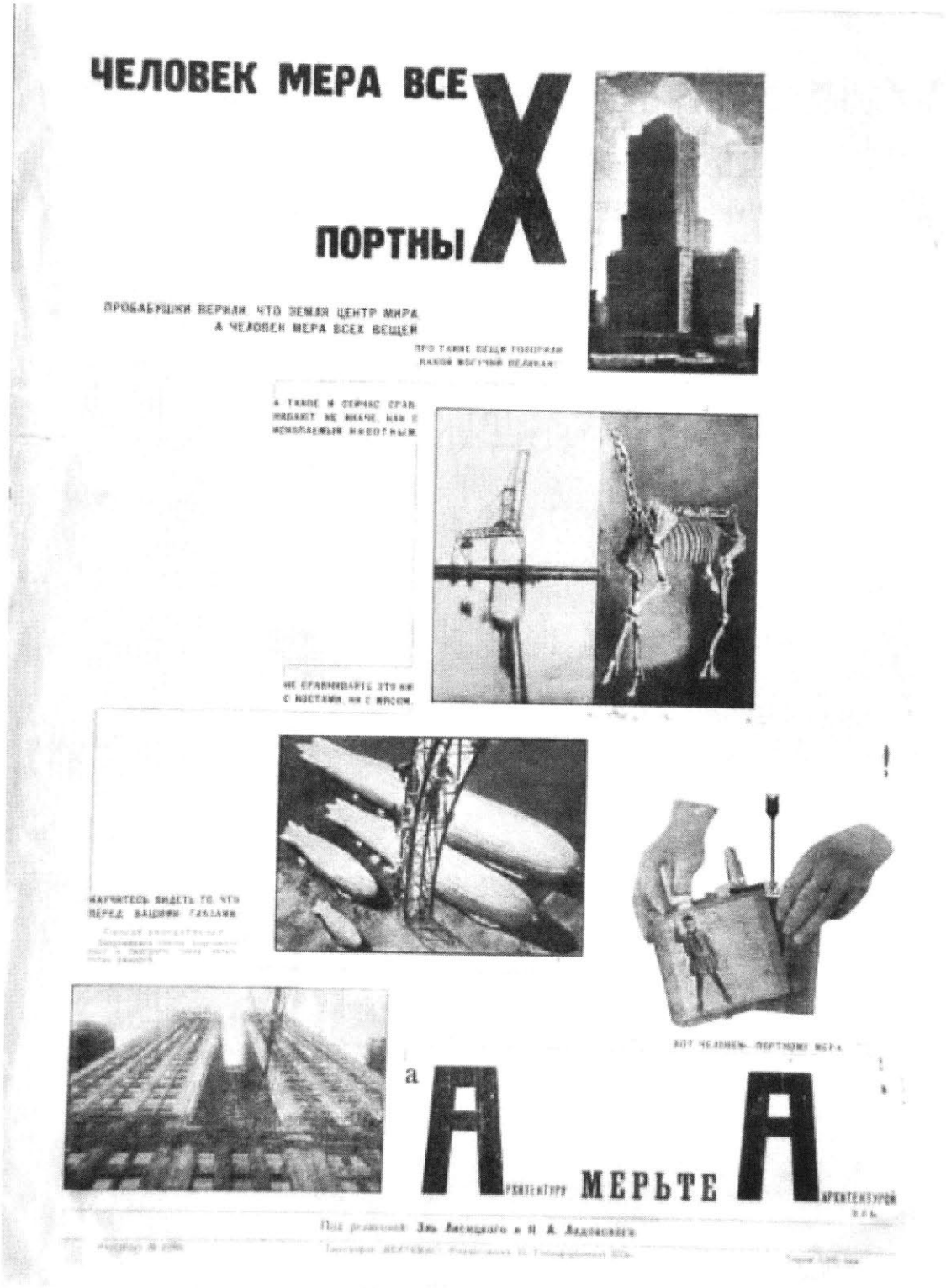

Fig. 2.17. El Lissitzky, *Man is the Measure of all Tailors*, 1926.

The Rationalists interpreted "seeing" architectural form as a complex process, in which *glazomer* was only an elementary unit, and in which comparison provided a basic tool of these units' psychological combination. What was constructed from them, was a spatial composition, organized and regulated by other, second-order faculties and methods. "For an investigation of more complex faculties it is necessary to divide them into a series of simpler components, which, in turn, are subjected to numerical measurement. It is in this direction that an investigation of the sense of architectural composition is being directed," wrote Ladovskii's former student and younger colleague Georgii Krutikov.[268] Ladovskii defined the first, basic properties of architectural talent as attention [*vnimanie*], unfolding it as memory, *glazomer*, and the sense of relationships. Attention was considered an expenditure of mental energy but properly developed these basic psychological traits—the biological prerequisite of becoming a successful architect—allowed an architect to perform his or her work in an energy-efficient way. The second-order properties, interpreted by Ladovskii as spatial giftedness [*prostranstvennaia odarennost'*], included spatial coordination, spatial orientation, spatial visualization [*prostranstvennoe predstavlenie*], spatial imagination [*prostranstvennoe voobrazhenie*], and spatial combination. These were tested with help of templates of basic geometric or volumetric forms, in which a student had to combine certain two- or three-dimensional figure.[269] Attention, that is, memory

[268] Krutikov, „Arkhitekturnaia nauchno-issledovatel'skaia laboratoria pri Arkhitekturnom fakul'tete Moskovskogo Vysshego Khud.-Tekhnich. Instituta," *Stroitel'naia promyshlennost',* 373. Translation by the author. Russian original: «При исследовании более сложных способностей требуется предварительное расчленение последних на ряд более простых составных элементов, каковые уже и подвергаются числовому измерению. В таком направлении ведется исследования чувства архитектурной композиции».

[269] To test spatial imagination, spatial combination, and spatial systematizing, the subject was shown a drawing of a geometric figure and asked to combine it from the set of templates of basic geometric forms. The same task was also posed for simple volumetric elements, which had to be combined into a required shape. The development of this group of tests, in particular, spatial combination, or "a diverse possible arrangement of (flat, volumetric) forms one with respect to another in (two-dimensional, three-dimensional) space," Ladovskii delegated to his doctoral student

and *glazomer* in its physiological sense, belonged to the domain of looking at, *smotrenie,* while spatial giftedness, understanding and mastering space, as the higher faculty of creative mind, was associated with seeing, *videnie.* The correct way of looking at ("Directions for use: Throw [your] head back, lift the paper, and then you will see" taught Lissitzky) and employing *glazomer* guaranteed the correctness of seeing—an understanding of, in Dokuchaev's words, what is "most characteristic for the object—what it consists of and how its elements are united into a coherent architectural whole."[270]

The results of the tests that the students took were recorded in a special personal profile that supplemented their academic transcript. The form, developed by Ladovskii, consisted of three columns, Index, Rank, and Category, as well as a grid for a graphic representation of the psychological profile of architectural giftedness; and a space for a general conclusion.[271] According to the cumulative result of the tests, the students were divided into five groups (categories), and already before meeting a student in person the pedagogue could see what the weak sides of his or her talent were. Later on, assuming that good pedagogy led to the development of talent, the profile graph allowed for monitoring improvements and conducting an objective and precise registration of the success of the architectural education.

Georgii Krutikov, having recommended him to refer to mathematical combinatorics (teoria soedinenii). Krutikov soon discovered, however, that combinatorics did not consider the spatial location of objects and their orientation in space, and completed it with his own formulas, which described the relationships between three-dimensional objects in space.

[270] Dukuchaev, "Poiasnitel'naia zapiska," 79.

[271] The index, i.e. a grade for the test, was to be determined differently for each test. For instance, in a test consisting of ten tasks, three solved tasks would give the index three, while four solved tasks would give four. Alternatively, in a test involving the use of a mechanism, a student might be asked to divide a line into halves; a one centimeter mistake would give an index of one, while a the mistake of two centimeters would make it two and so on. Krutikov, "Arkhitekturnaia nauchno-issledovatel'skaia laboratoria pri arkhitekturnom fakultete VKhUTEIN" *Arkhitektura i VKhUTEIN*, 2-4.

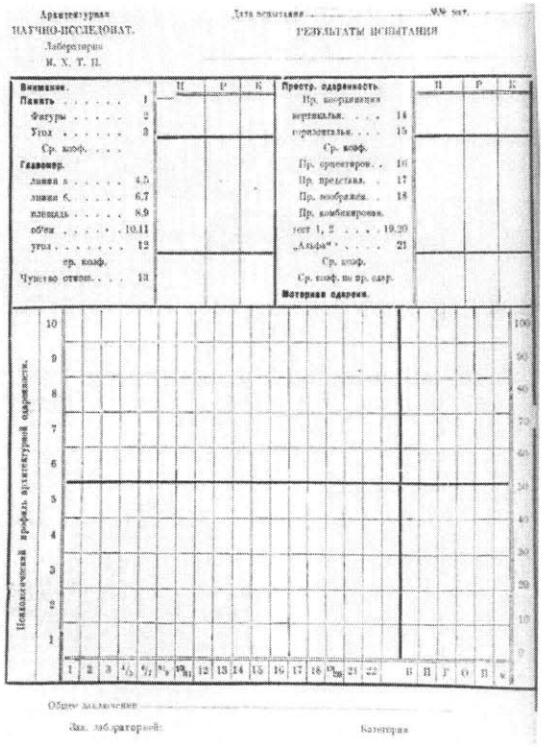

Fig. 2.18. Nikolai Ladovskii, Student Profile Form, VKhUTEIN, 1929.

Attention	**Spatial Giftedness**
Memory	Spatial Coordination
Figures	Vertical
Angle	Horizontal
Mean Coefficient	Mean Coefficient
Glazomer	
Line a	Spatial Orientation
Line b	Spatial Visualization
Square	Spatial Imagination
Volume	Spatial Combination
Angle	
Mean Coefficient	Test 1, 2
	"Alpha"
The Sense of Relationships	Mean Coefficient
	Mean Coefficient of Spatial Giftedness
	Motor Giftedness

The personal profile form, which Ladovskii developed and suggested to use at VKhUTEIN, closely followed recommendations for evaluation of professional potential and

intellectual giftedness of university students, suggested in 1927 by Soviet psychologist Petr Antonovich Rudik (1893-1989).[272] Tailoring his research to an evaluation of giftedness of technical and social sciences students, Rudik, using to German-language terminology, defined his subject "not as an 'Intelligenz,' but as a 'Begabung',"[273] that is, not as only intellectual, but also as a physiological prerequisites for learning. Rudik proposed measuring this giftedness according to a scheme, which, with the exception of spatial giftedness, evaluated the same parameters as Ladovskii's form:

I. Attention
1. Concentration [of attention]
2. Division [of attention]
3. Productivity [of attention]

II. Memory
4. Memory for numbers
5. Memory for words
6. Memory for figures
7. Keenness of observation

III. Intellectual giftedness
8. Speed of associations
9. Richness of verbal associations
10. Combination of words
11. Combination of phrases
12. Logical combination
13. Understanding of analogies
14. Understanding of meaning

IV. Motor giftedness
15. Speed of writing numbers
16. Speed of writing letters
17. Speed of writing strokes
18. Simple reaction
19. Complex reaction

[272] P[etr] A. Rudik, *Umstvennaia odarennost' i ee izmerenie* [*Intellectual Giftedness and Its Evaluation*] (Moskva: Izdatel'stvo Kommunisticheskogo Universiteta, 1927).

[273] Rudik, *Umstvennaia odarennost' i ee izmerenie,* 3, 14.

V. Complex processes
20. Hearing
21. Reading
22. Cleverness [*soobrazitel'nost'*]
23. Capacity for orientation
[...]

VI. Technical giftedness
24. Eye-balling [*glazomer*]
25. Perception of forms
26. Imaging of forms
27. Combination of forms[274]

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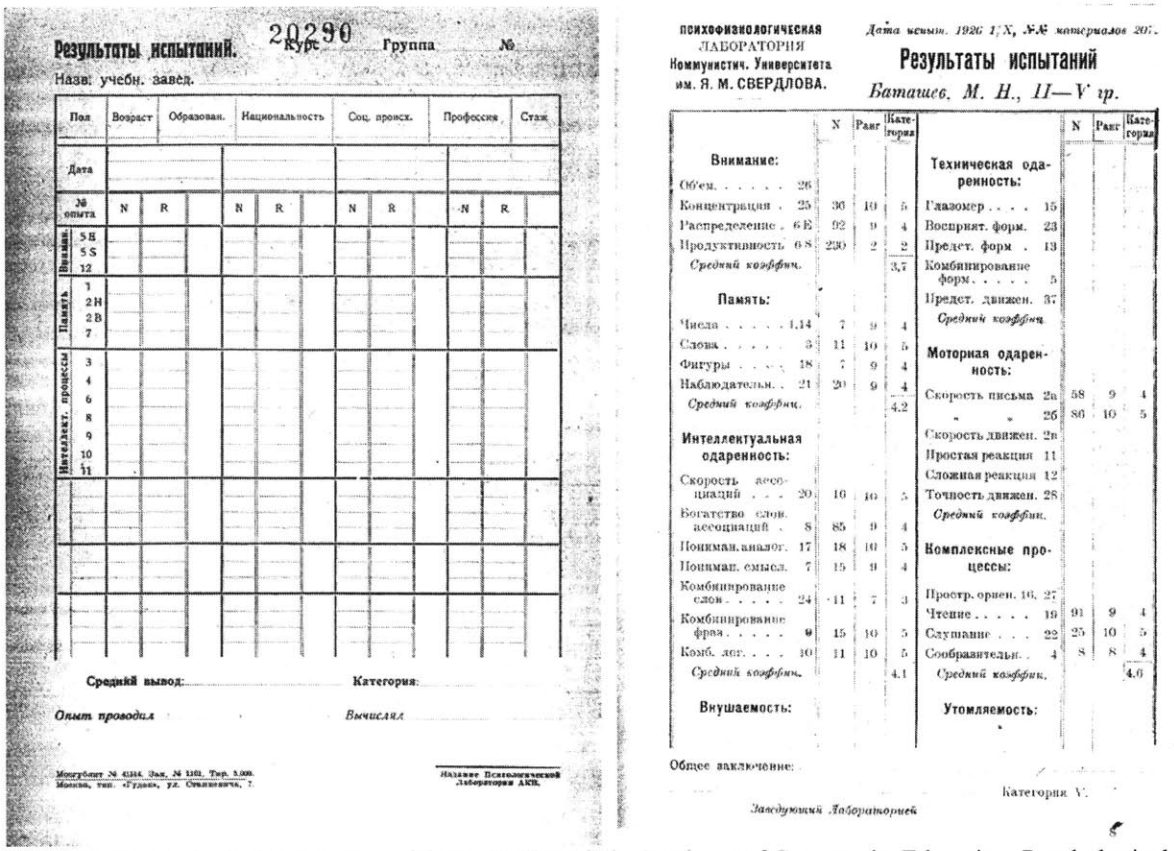
[274] Rudik, *Umstvennaia odarennost' i ee izmerenie,* 37-38. Translation by the author. Russian original:
« I. Внимание.
1. Концентрация
2. Распределение
3. Продуктивность
II.Память
4. Память чисел
5. Память слов
6. Память фигур
7. Наблюдательность
III. Интеллектуальная одаренность
8. Скорость ассоциаций
9. Богатство словесных ассоциаций
10. Комбинирование слов
11. Комбинирование фраз
12. Комбинирование логическое
13. Понимание аналогий
14. Понимание смысла
IV. Моторная одаренность
15. Скорость письма цифр
16. Скорость письма букв
17. Скорость письма палочек
18. Простая реакция
19. Сложная реакция
V. Комплексные процессы
20. Слушание
21. Чтение
22. Сообразительность
23. Способность ориентироваться
[...]
VI. Техническая одаренность
24. Глазомер
25. Восприятие форм
26. Представление форм
27. Комбинирование форм».



Результаты испытаний. 20290 Курс Группа №

Назв. учебн. завед.

Пол	Возраст	Образован.	Национальность	Соц. происх.	Профессия	Стаж

Дата

№ опыта	N	R		N	R		N	R		N	R	
Внимание	5Б											
	5S											
	12											
Память	1											
	2Н											
	2В											
	7											
Интеллект. процессы	3											
	4											
	6											
	8											
	9											
	10											
	11											

Средний вывод: Категория:

Опыт проводил Вычислял

Мосгублит № 41344. Зак. № 1161. Тир. 5.000. Москва, тип. «Гудок», ул. Семашенича, 7.

Название Психологической Лаборатории АКК.

ПСИХОФИЗИОЛОГИЧЕСКАЯ ЛАБОРАТОРИЯ Коммунистич. Университета им. Я. М. СВЕРДЛОВА.

Дата испыт. 1926 1/X, №№ материалов 207.

Результаты испытаний

Баташев, М. Н., II—V гр.

	N	Ранг	Категория
Внимание:			
Об'ем	26		
Концентрация .	25	30	10	5
Распределение .	6Б	92	9	4
Продуктивность	6 S	230	2	2
Средний коэффиц.				3,7
Память:				
Числа	1,14	7	9	4
Слова	3	11	10	5
Фигуры	18	7	9	4
Наблюдательн. .	21	20	9	4
Средний коэффиц.				4.2
Интеллектуальная одаренность:				
Скорость ассоциаций . . .	20	10	10	5
Богатство слов. ассоциаций .	8	85	9	4
Пониман. аналог.	17	18	10	5
Пониман. смысл.	7	15	9	4
Комбинирование слов	24	11	7	3
Комбинирование фраз	9	15	10	5
Комб. дет. . . .	10	11	10	5
Средний коэффиц.				4.1
Внушаемость:				

	N	Ранг	Категория
Техническая одаренность:			
Глазомер	15		
Воспринят. форм.	23		
Предст. форм .	13		
Комбинирование форм.	5		
Предст. движен.	37		
Средний коэффиц.			
Моторная одаренность:			
Скорость письма 2а	58	9	4
" " 2б	86	10	5
Скорость движен. 2в			
Простая реакция 11			
Сложная реакция 12			
Точность движен. 28			
Средний коэффиц.			
Комплексные процессы:			
Простр. ориен. 16, 27			
Чтение	19	91	9	4
Слушание . . .	22	25	10	5
Сообразительн. .	4	8	8	4
Средний коэффиц.				4.6
Утомляемость:				

Общее заключение:

Категория V.

Заведующий Лабораторией

Fig. 2.19. Psychological Laboratory of the N. K. Krupskaia Academy of Communist Education. Psychological profile of general giftedness. Tests edited by P. A. Rudik. Series A2.
Fig.2.20. Psychophysiological Laboratory of the Ia. M. Sverdlov Communist University. Forms for the results of psychotechnical tests.

This scheme, Rudik explained, was based on the work of Charles Edward Spearman, who viewed giftedness as a general function of central nervous system; as a result, persons were viewed not as an autonomous agents, but as organisms interacting with an external environment. Perception was taken as the first, basic response of an organism to external stimuli; it was followed by a processing of perceptual data, which in turn led to responsive action. [275] Just as in Rudik's list of recommended tests, the prerequisites of perception—attention and memory—were the first properties tested by Ladovskii, with the specification that he was particularly interested in their visual components (memory for figures and angles). Subsequent properties

[275] Rudik, *Umstvennaia odarennost' i ee izmerenie,* 10-12.

evaluated students' capacity for processing the data of perception. Key among them, for Rudik, was intellectual giftedness, which defined how a student understood and remembered material. Tailoring Rudik's scheme for students of architecture, Ladovskii replaced intellectual giftedness with *glazomer* and spatial giftedness (both properties were assessed by Rudik as an additional group defined as technical giftedness—"an ability to identify and combine geometrical forms in a certain way, as well as a capacity for precise visual perception"[276]). *Glazomer*, as "the base on which other technical functions will emerge"[277] presented for Rudik a combination of perceptual and processing tasks and thus was a prerequisite for the more complex function of spatial combination. Both were evaluated by Rudik with help of paper tests borrowed from various, mostly American, psychotechnical publications. Spatial combination, for instance, Rudik and Ladovskii both proposed testing with the "Alpha Test," in which the subject had to compose a square out of its chaotically mixed parts, a test that was developed by Robert Yerkes to select recruits for the United States army during the First World War.[278] Ladovskii wished to explore this most complex function of processing spatial perception Ladovskii further, delegating this work to his doctoral student Georgii Krutikov, who based his research on mathematical combinatorics [*teoria soedinenii*].[279]

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[276] Rudik, *Umstvennaia odarennost' i ee izmerenie,* 35.

[277] Rudik, *Umstvennaia odarennost' i ee izmerenie,* 35.

[278] Rudik, *Umstvennaia odarennost' i ee izmerenie,* 37.

[279] Khan-Magomedov, *Ratsionalism,* 367. See Krutikov's article "Prilozhenie teorii soedinenii k issledovaniiu i izmereniiu sposobnosti prostranstvennogo kombinirovaniia" ["An application of mathematical combinatorics to a study and evaluation of capacity for spatial combination"], *Arkhitektura i VKhUTEIN* No.1 (1929): 5. Krutikov soon discovered, however, that the combinatorics was insufficient for an analysis of elements in space.

For both Rudik and Ladovskii, psychotechnics offered an objective, scientifically-precise way of selecting students and evaluating their educational success. Devoid of any arbitrariness and subjectivity, psychotechnical testing also discarded the questions of individual preferences, tastes, and even motivation. According to Rudik, who cited an example of American universities that successfully employed psychotechnical testing for the selection of incoming students, "The choice of this or that higher educational institution cannot be treated as the personal matter of each individual candidate. It also possesses an important significance for the state, because the state makes huge investments into the organization of higher educational institutions."[280] Yet developed as a way of avoiding authoritarianism of the "master," Ladovskii's focus on the objectivity of judgment and evaluation through quantifying subjective physiological and psychological processes ultimately led to a dictatorship of the testing machine. When architectural talent was redefined as a capacity of spending a minimum of energy, its old criteria, such as originality and insight, became no longer valid. Probably the most famous subject to fail a *prostrometr* test was none other than Le Corbusier who, during his visit to Moscow in 1928, became fascinated with Ladovskii's experiments. Unfortunately for Le Corbusier, it was established that the images of reality that his two eyes provided were too different from each other: the French master therefore suffered from a defect of stereoscopic vision.[281] The verdict signified Corbusier's complete physiological incapability for architectural work—an impossibility of easy, unconscious imagining spatial relationships. A modernist dream, a tool of

[280] Rudik, *Umstvennaia odarennost' i ee izmerenie,* 15-16. Translation by the author. Russian original: «Выбор того или иного вуза не может рассматриваться как личное дело каждого отдельного кандидата. Он имеет и большое общегосударственное значение, поскольку государство вкладывает громадные средства на организацию высших учебных заведений».

[281] The anecdote is reported by Vöhringer after Khan-Magomedov's words. Vöhringer, *Avant-garde und Psychotechnik,* 35.

quantification of what had been previously believed to possess a divine, super-human status—art, talent, and genius—Ladovskii's machine killed artistic independence alongside artistic arbitrariness.

Conclusion

This chapter has argued, that Rationalist architectural theory and subsequently pedagogy had their methodological foundation in German-language empiriocriticism, especially in the work of Ernst Mach and Richard Avenarius. The latter's imperative to economize perceptive energy was wholeheartedly embraced by Nikolai Ladovskii, who transformed it into a guiding principle of his work and an axiom on which he built of his architectural theory. Alongside Avenarius's imperative, Ladovskii's theory was indebted to Mach's epistemological model, which presented the world as a sum of subjective psychological sensations. Such a subjectivization of reality seemingly endowed architects with an unprecedented role and power: as designers of perception, they became true demiurges, capable of constructing and changing reality at will. Reflected in VKhUTEMAS rector Pavel Novitskii's slogan "All power to architecture" and emphasized by Boris Groys's comparison of avant-garde to totalitarianism, this self-proclaimed importance of architecture asserted architects' extraordinary individual freedom in formal solutions as well as in their underlying ideological program. Nevertheless, Ladovskii's testing apparatuses betrayed a failure of this model: by mechanicizing the notion of perception, Ladovskii sacrificed individuality for efficiency's sake. Applied to architectural perception, the mottos of the day, standardization and economy, standardized the architect in the name of physiological norm. In 1928, the year Ladovskii's *prostrometr* rejected Le Corbusier's

architectural vision and the First Five-Year Plan was launched, this standardization was an avant-garde idea, aspiring to contribute to the general program of the economy of resources for the sake of the economic Plan. By the time the Second Five-Year Plan began in 1933, the price of this standardization became all too clear: alongside the abnormal, it eliminated the individual.

CHAPTER TWO

DEVELOPING PRODUCTIVE ENERGY: WALLPAINTING AND THE STANDARDIZATION OF THE SUBJECT (1929-1932)

Hey you, twenty-year-olds,
We call for you.
Drumming,
Bring pails of paint.
We will paint anew.
Shine, Moscow!

Vladimir Mayakovsky (1919)[282]

The multi-level model developed explained 51% of the variability in the learning improvements of the pupils, over the course of a year. However, within this a high level of explanation (73%) was identified at the "class" level, linked entirely to six built environment design parameters, namely: colour, choice, connection, complexity, flexibility and light.

From a *Building and Environment* article (2013) [283]

In the 1940s, Fernand Léger claimed that the idea of painting the facades of houses in different colors was first developed by him during the First World War together with Leon

[282] Vladimir Mayakovsky, "My idem" ["We come"] (1919), multiple editions. Translation by the author. Russian original: «Эй, двадцатилетние! | взываем к вам. | Барабаня, | тащите красок вёдра. | Заново обкрасимся. | Сияй, Москва! Маяковский, Мы идем».

[283] Peter Barrett, Yufan Zhang, Joanne Moffat, Khairy Kobbacy "A holistic, multi-level analysis identifying the impact of classroom design on pupils' learning," *Building and Environment* Vol. 59 (2013): 678-689 (678).

Trotsky, with whom he often talked about "the thrilling problem of a colored city" during his Montparnasse furloughs. "The idea of a blue street, a yellow street aroused his [Trotsky's] enthusiasm," and the Bolshevik, according to Léger, wanted him to go to Moscow to implement his theories of color on its streets. [284] Recounted at the moment of the transformation of Trotzky into a cultural legend and an icon of romantic revolutionarism after his assassination by Stalin's agent in 1940, this story is likely to be apocryphal or, at least, exaggerated.[285] Nevertheless, Léger's anecdote is elucidative in that it highlights the political potential of color in architecture. An extremely powerful psychological stimulant, color could inspire and excite like no other formal instrument of an architect. It could call people for streets and barricades, energize them for work and military feats, intensify their joy or sorrow.[286] Moreover, as the Soviet designers in the late 1920s-early 1930s discovered, color could affect people in a much subtler way, by impacting their physiological functioning, intellectual activity, and aesthetic response.

This chapter will focus on wallpainting, a discipline that emerged on the boundary of art and architecture during the late 1920s-early 1930s, to demonstrate how an ideological program controlled the artistic medium through the manipulation of physiological responses a formal property, color. Examining the history of wallpainting as an artistic genre and architectural

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[284] Fernand Léger, "Modern Architecture and Color," *American Abstract Artists,* transl. George L. K. Morris (New York, 1946). Reprinted in Fernand Léger. *Functions of Painting. New York: Viking Press, 1973*, 149-153 (152). The same anecdote is repeated in Léger's "A New Space in Architecture," *Art d'Aujourd'hui* (1949). Reprinted in Léger, *Functions of Painting*, 157-159 (158).

[285] Trotsky, after all, was deported from Paris in early 1916, when hardly anyone could predict the proximity and success of the Bolshevik revolution—which gestated and started, in any event, not in Moscow but in St. Petersburg (then Petrograd).

[286] In 1919, Malevich and Lissitzky formed Unovis in Vitebsk, where they contributed to the revolution by painting the facades of houses in Suprematist compositions for the sake of propaganda. In 1921, socialist Bruno Taut (one of the most popular German architects in Russia at the time) became the chief architect of Magdeburg, where he started his campaign of painting the facades of the town.

discipline in the USSR, this chapter will situate its emergence in the context of Soviet economic history, especially focusing on the forced industrialization that the country underwent during the First Five-Year Plan, and connect wallpainting to the new intellectual program that supported it. In accordance with the demand of the day for the mobilization of every resource (including that of labor) for building an industrial economy the new Soviet subject above all had to possess a higher level of energy, to be transformed him or her into an indefatigable working machine. This chapter argues that Soviet wallpainters attempted to use color as a tool for increasing the functionality of their subjects as elements of the Soviet economic apparatus by helping them to save their productive, working energy. To substantiate this claim, I first assess the notion of color and its relationship to architecture that existed in Soviet and, to some extent, German, architectural thought in the late 1920s, before turning to explore how these theories were merged with the results of psychophysiological research—the concepts of fatigue, attention, and unconscious perception—in order to make wallpainting an instrument of social engineering.

A discussion of wallpainting also allows entry into the late-1920s debate on the essence and the future of art: far from today's understanding of it as a modest practical task of coloring surfaces, at its modernist heyday, wallpainting aspired to nothing less than becoming a new art of color, which was destined to both kill painting and become its new incarnation. The debates and discussions on wallpainting revolved around its status of an autonomous artistic genre—a modern, technological, and deindividualized art of working with color. Not artistic caprices, but considerations of economy and scientific calculation governed the choices of colors and the methods of their application. Most importantly in the context of the First Five-Year Plan, wallpainting was a form of art that allowed for standardization—a development of unified

solutions for certain typological, functional, regional and economic conditions—thereby bringing artistic production into the orbit of economic development.

In art and architecture, planning and standardization promised the creation of works that made quality available to everyone. This promise prompted Constructivist artists (Rodchenko, Stepanova, and Popova, among others) to turn away from their early, "laboratory," experimentation towards the so-called Productivism, which postulated the replacement of autonomous art with industrial design. Mass-produced, standardized solutions for art and architecture destroyed the aura and ritual of humanist art famously described by Benjamin in 1936. Without sliding into Greenbergian kitsch, they defied the values of autonomy, self-referentiality, media-specificity and individuality in the work of art that were intrinsic to canonical modernism.[287] The program of wallpainting continued the work of the Constructivists on the dissolution of art, simultaneously overcoming this program by suggesting alternative ways of engaging color (freed, as the modernists wanted, from the restrictions of narrative and style) into the life and working activity of people.

Aleksandr Rodchenko's "Last painting," a part of the "5x5=25" exhibition in Moscow (1921), demonstrated which outcomes carried an analytical redefinition of painting as color.[288] It

[287] In the early 1920s, László Moholy-Nagy had his famous "Telephone paintings" produced at a local enamel factory. The artist recalled: "In 1922 I ordered by telephone from a sign factory five paintings in porcelain enamel. I had the factory's color chart before me and I sketched my paintings on graph paper. At the other end of the telephone the factory supervisor had the same kind of paper, divided into squares. He took down the dictated shapes in the correct position. (It was like playing chess by correspondence.) One of the pictures was delivered in three different sizes, so that I could study the subtle differences in the color relations caused by the enlargement and reduction." László Moholy-Nagy, *The New Vision and, Abstract of an Artist* (New York: Wittenborn, 1947) 79.

[288] "5x5=25" was an abstract art exhibition held in Moscow in September and October 1921. Each of the five participating artists (Aleksandra Ekster, Lyubov Popova, Alexander Rodchenko, Varvara Stepanova and Alexander Vesnin) exhibited five paintings (hence the exhibition's title).

presented three canvases, each monotonously painted into one of the three primary colors. To the satisfaction of art critic Nikolai Tarabukin, Rodchenko not only eliminated narrativity and figuration from art—he bereaved art of any idea and meaning:

> And when the artist really wanted to get rid of representation, he achieved this only at the cost of destroying painting and only at the cost of destroying himself as a painter. I am referring to the canvas which Rodchenko offered to the attention of an astonished public at one of this season's exhibitions [5x5 = 25, 1921]. This was a smallish, almost square canvas painted entirely in a single red colour. This canvas is extremely significant for the evolution of artistic forms which art has undergone in the last ten years. It is not merely a stage which can be followed by new ones but it represents the last and final step of a long journey, the last word, after which painting must become silent, the last 'picture' made by an artist. This canvas eloquently demonstrates that painting as a figurative art—which it has always been—is outdated. If Malevich's Black Square on a White Background, despite the poverty of its artistic meaning, did contain some painterly idea which the author called "economy," "the fifth dimension," then Rodchenko's canvas, which is devoid of any content, is a meaningless, dumb and blind wall [*tupaia, bezglasnaia, slepaia stena*].[289]

In contrast to the Renaissance vision of painting as a window to reality or even to Malevich's *Black Square* that offered an experience of the transcendental, Tarabukin declared Rodchenko's work to be a solid, blind wall. Dumbness, muteness, blindness—the characteristics used by Tarabukin to describe the wall-ness of Rodchenko's canvas—deprived it of an ability to perceive

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[289] Nikolai Tarabukin, "Ot molberta k machine" (Moscow, 1923). Translated by Christina Lodder in *Modern art and Modernism: A Critical Anthology*. Ed. by. F. Franciscana and Ch. Harrison. London: Harper and Row, 1986, 135-142. Russian original: «И когда художник захотел действительно избавиться от изобразительности, от этого достиг лишь ценою уничтожения живописи и ценою самоубийства, как живописца. Я имею в виду полотно, которое Родченко на одной из выставок нынешнего сезона предложил вниманию удивленных зрителей. Это было небольшое, почти квадратное полотно, сплошь закрашенное одним красным цветом. В эволюции художественных форм, которую совершило искусство за последнее десятилетие, этот холст чрезвычайно знаменателен. Он не является уже этапом, за которым могут последовать новые, а представляет собою последний, конечный шаг в длинном пути, последнее слово, после которого речь живописца должна умолкнуть, последнюю «картину», созданную художником. Это полотно красноречиво доказывает, что живопись, как искусство изобразительное,--а таковым оно было всегда,--изжила себя. Если черный квадрат на белом фоне Малевича, при всей скудности своего художественного смысла, содержал в себе некую живописную идею, названную автором «экономия», «пятое измерение», то полотно Родченко лишено всякого содержания: это тупая, безгласная, слепая стена». Nikolai Tarabukin, *Ot mol'berta k mashine* [*From Easel to the Machine*] (Moskva: Rabotnik prosveshchenia, 1923) 11-12.

and to be perceived, destroyed any possibility of a connection between the work of art and the viewer. The wall, in other words, embodied lifeless inanimate matter. At the same time, however, Tarabukin insisted on viewing Rodchenko's canvas as an example of easel art rather than as decorative wall-painting: being analytically segregated into its pure elements, painting exposed its material, mechanistic nature and, bereaved of soul and life, was destined to die.[290]

Similarly to Rodchenko and Tarabukin, Soviet wallpainters announced the death of art as an individual creative endeavor and suggested to replacing it with a technologized and deindividualized medium. However, while denying architecture aesthetic pleasure and intellectual significance, they preserved its connection with the subject and the environment. In doing so, they rehumanized Tarabukin's wall, which was no longer meaningless, dumb and blind, but on the contrary, intelligent, responsive to its surroundings and affecting the person perceiving it, while simultaneously dehumanizing the subject. The latter, deprived of aesthetic and intellectual qualities, was transformed into a physiological machine, a chain of stimulus-response reactions. No longer bearing individual differences, this subject was an object of scientific experiment, understandable, predictable and controllable. If psychophysiology analyzed this subject into its constituent parts, Soviet wallpainters believed that it was the goal of architecture to synthesize this subject by means of psychological stimuli provided by the environment, of which color was one of the most effective. The subject, not the surface of the wall, was the ultimate object of the wallpainters' work.

Examining the history of wallpainting in the late-1920s and -early 1930s USSR, this chapter will focus on the group of artists and architects united around Maliarstroi (from

[290] Tarabukin, *Ot mol'berta k mashine*, footnote 3.

maliarnoe stroitel'stvo, literally, wallpainting construction), a state research and design center for wallpainting, active in Moscow from 1929 to1932. The architectural work of Maliarstroi was led by two former Bauhaus designers—the head of the Wallpainting workshop Gerhard Hermann Heinrich (Hinnerk) Scheper (1897-1957) and his student Erich Willi Borchert (1907-1944)—who collaborated with their Russian colleagues (architects Moisei Ginzburg, Nikolai Ladovskii, and El Lissitzky; artists Leiba Antokol'skii, Boris Ender, and others) both within and beyond the organization. Functioning during the time of the First Five-Year Plan, Maliarstroi was the fruit of the state economic program and, more specifically, of the politics of standardization, which became a priority in industry, in architecture, and even, as this chapter will argue, in social engineering. Maliarstroi became the site of dialogue, conflict and the mutual influence of German social-democratic and Soviet models of modernist subjectivity: if the former believed that the improvement of physiological functions alone would improve the general energetic level of the subject, the latter drove the economizing imperative to its logical conclusion, saving the subjects' mental energy by prescribing directions of movement and emotional attitudes.

Color Harmonies

Exemplified by the rivalry of Ingres and Delacroix as the battle between line and color, debates on the essence of painting shaped European art theory during the nineteenth century, presaging the dominant discourse of twentieth-century American art criticism. Much of early abstract art continued the Romantic Delacroix tradition with its focus on color, and as early as 1916, Kazimir Malevich used an association of painting with color to support his argument against figuration. Painting, according to Malevich, had to transform itself into

"chromatography": "We will only have a clear perception of color when we are rid of the utopia of representational painting and when chromatographic representation has acquired a lucid, two-dimensional surface. ... Color—is a unit, an element; by incorporating light physical matter acquires energy which acts on our nervous system."[291] Similarly in 1919 a disciple of Malevich and a VKhUTEMAS pedagogue[292] Ivan Kliun suggested to replace painting with "Color art":

> But if the art of painting, the art of expressing nature, has died, the color, paint, as the basic elements of this art, have not died. Liberated from the centuries-old bond of nature, they have begun to live their own life, to develop freely, and to display themselves in the New Art of Color—and our color compositions are subject only to the laws of color, and not to the laws of nature."[293]

When architects and artists accepted the axiom of a constitutive power of perception, they embarked into a thorough psychological and physiological study of perceptual mechanisms. Already Kandinskii's 1920 program for the Institute of Artistic Culture (INKhUK) in Moscow, one of the early Soviet avant-garde research initiatives, specified that

> ...We should collate materials from the various sciences that work in one way or another with color. We should inform specialists in these sciences of the aims of the Institute's research on color and should invite them to come and work with us. Most prominent among these kinds of sciences are physics, physiology, and medicine (diseases of the eye, choromotheraphy, psychiatry, etc.)."[294]

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[291] Malevich, "Chromatography," *Complete Works in Five Volumes*, vol. 5 (Moskva: Giliia, 2005). Quoted in Aleksandra Shatskikh, "Color and Light in Suprematism," *Licht Und Farbe in Der Russischen Avantgarde : Die Sammlung Costakis Aus Dem Staatlichen Museum Fu¨r Z eitgeno¨ssische Kunst Thessaloniki = Light and Colour in the Russian Avant-Garde*, ed. Miltiades Papanikolaou (Ko¨ln DuMont, 2004) 466.

[292] Ivan Vasil'evich Kliun (real last name Kliunkov; 1873-1943) was a member of early Russian avant-garde, affiliated with Futurism and Suprematism, subsequently a member of INKhUI and a professor of State Independent Art Studios (since 1920, VKhUTEMAS) in 1918-1921.

[293] Ivan Kliun, "Color Art" (1919), *Licht Und Farbe in Der Russischen Avantgarde*, 469.

[294] Wassily Kandinsky, "Program for the INKhUK," *Kandinsky, Complete Writings on Art*, in 2 vols., ed. Kenneth C. Lindsay, and Peter Vergo. Vol. 1 (Boston, Mass: G.K. Hall, 1982) 455-471 (460).

Although Kandinsky's eclectic theory recommended supplementing these sciences with "the sciences of the occult" and believed that positive sciences could not replace artistic intuition, which alone allowed opening art to its true goal, the "inner experience of man," Kandinsky's followers, having rejected his mysticism, maintained his interest in the perception of color.[295]

The association of painting with color was rooted in the identification of every art with a particular domain of sensory experience, a system developed by formalist aesthetics; as such, it determined the "objective" and "analytical" system of introductory courses at VKhUTEMAS, which indentified architecture with space, sculpture—with form, and painting—with color.[296] Though initially the analytical approach to color at VKhUTEMAS possessed traces of Kandinsky's mysticism, in the mid-1920s (particularly during the rectorship of Pavel Novitsky in 1926-1930), it acquired a new, scientific character. The scientization of artistic education at VKhUTEIN (as VKhUTEMAS was renamed in 1927) was simultaneous with similar processes at the Bauhaus (especially during the directorship of Hannes Meyer in 1928-1930) and was perhaps even more systematic. Specialists in psychology, physiology, logics and other philosophical and scientific disciplines were invited as guest lecturers to Dessau,[297] and at VKhUTEMAS leading Soviet psychologists and physicists working on color taught color theory courses on a permanent basis. Among them was prominent psychologist Sergei Kravkov, whose major affiliation was with the Laboratory of the Psychophysiology of Sensations at the Psychological Research Institute at the Moscow State University, and who in the 1920s

[295] Kandinsky, "Program for the INKhUK," 471.

[296] More on this system, see Chapter One of this dissertation.

[297] See Peter Galison, "Aufbau/Bauhaus: Logical Positivism and Architectural Modernism," *Critical Inquiry* Vol. 16, No. 4 (1990): 709-752.

specialized in the physiology of senses, particularly eyesight, exploring the connection between the eyes and other sensorial organs, and the body in general.[298] Also working at VKhUTEMAS/VKhUTEIN was another psychologist, Boris Teplov, who specialized in military masking, exploring the interaction of sensations, the spatial merging of colors, the thresholds of saturation and the effect of various light irritants.[299] In the early 1930s, Sophia Beliaeva-Ekzempliarskaia, a psychologist interested in the perception of music, who simultaneously worked at the Acoustic Laboratory of Moscow Conservatory and (alongside Kravkov) at the Psychophysical Laboratory of the State Academy of Artistic Sciences, also joined VKhUTEIN, which by then was reorganized as the Moscow Institute of Architecture and Construction.[300] Also teaching color theory course was biophysicist Nikolai Fedorov, who researched the adaptation of sensual organs to physical irritants and who in 1935 published *A Course of General Color-Theory*, in which he introduced Soviet audience to the science of colorimetry, or color measurement. Fedorov's colorimetry took vision as an instrument of measuring the sources of

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[298] Sergei Vasil'evich Kravkov (1893-1951) was a student of the leader of Russian psychophysiological school, specialist on spatial perception Georgii Chelpanov. In 1926, Kravkov published a Russian translation (with an introduction) of Ostwald's *Einführung in die Farbenlehre*. During the 1930s and 1940s Kravkov became one of the most prominent Soviet psychologists, specializing on the physiology of eyesight. His books include: *Glaz i ego rabota* [*The Eye and its Work*] (1932, multiple reprints); *Ocherk obshchei psikhofiziologii chuvstv* [*An Account of the General Psychophysiology of Senses*] (1946), *Vzaimodeistvie organov chuvstv* [*Interaction of Sense Organs*] (1948), *Tsvetovoe zrenie* [*Color Vision*] (1951). See also, Margareta Tillberg, *Coloured Universe and the Russian Avant-Garde: Matiushin on Colour Vision in Stalin's Russia, 1932*. Diss., Stockholm University, 2003, 254-255.

[299] Boris Mikhailovich Teplov (1896-1965) was another student of Chelpanov. During the 1920s, he developed the question of military masking from a psychological point of view. Since the 1930s, Teplov was mostly preoccupied with differential psychology and the development of a talent (particularly, musical talent).

[300] Sofia Nikolaevna Beliaeva-Ekzempliarskaia (1895-1973) was a Soviet musicologist and psychologist with a particular interest in visual illusions and in the psychology of music (musical perception, age- and social-group-specific musical development).

color waves of energy.[301] Bringing together the physical and the psychological approach, his method defined color as a "general name for all sensations arising from the activity of the retina of the eye and its attached nervous mechanisms, this activity being, in nearly every case in the normal individual, a specific response to radiant energy of certain wave-lengths and intensities."[302]

Accepting colorimetry's dualist division between perceived color and radiant energy, the teachers of color theory at VKhUTEIN considered both psychological and physical interpretations of color; most of them, however, prioritized the former over the latter. A course developed by Teplov in 1929, for example, started with a detailed historical survey of color theories from the seventeenth century on, covering, among other approaches, those of the seventeenth- and eighteenth-century scientists Newton, Boyle, du Fay, and Mayer, of German Romantics Goethe and Runge, and of precursors of modern physical and psychophysiological theories such as Maxwell, Betzold, Brücke, Helmholz, Ostwald, Hering, and Teplov's own teacher Petr Lazarev. The most substantial part of the course, "Contemporary theories of color," was divided into "physical" and "psychophysical" sections. The physical sections dealt with the reflection of light, the absorption of light by matter, the effects of interference and polarization, the optical mixture of colors and even color photography. The second, psychophysical sections, which constituted the most detailed and extensive part of the program, were devoted to visual perception, the mechanisms of the eye, the Weber-Fechner law, psychological color effects (such

[301] Nikolai Tikhonovich Fedorov (1891-1952) was a student of physicist Petr Lazarev (the founder of biophysics—a science that bridged physics, psychology, and medicine). Like his teacher, Fedorov explored color as both a physical and a psychological phenomenon. See also, Tillberg, "Coloured Universe and the Russian Avant-Garde," 253-254.

[302] L. T. Troland, "Report of Committee on Colorimetry for 1921-1922," *Journal of the Optical Society of America* Vol. VI (August 1922): 531-532.

as afterimages) and pathologies of color vision, the contrasts of colors and their laws, and various methods of measuring color, most importantly, Ostwald's system that understood every color as a mixture of pigment with black and white.[303]

However, even the most scientific of the courses taught at VKhUTEIN never lost sight of artistic expression as the ultimate goal of the knowledge of laws of perception. As the 1929 VKhUTEIN program proclaimed, color was a method of the painterly expression of form.[304] Artistic composition of color, even in the courses taught by physicists and physiologists, remained the ultimate goal of study, while the laws of physiology and color perception were treated as instruments for its achievement. This ultimate artistic purpose is evident, for example, in the structure and order of exercises in a sketchbook ofh practical assignments on color theory [*Praktikum po tsvety*] compiled by a student of Painting Department Aleksandr Lushin between 1928 and 1930 (most likely for Fedorov's course).[305] Covering various aspects of the theories of Ostwald and Maxwell, the relationship between saturation and luminosity, and the optical and material mixing of colors, the sketchbook contains 24 exercises that Lushin completed for the Color Theory course. Starting with more general and introductory material, connected to the contrast of light and dark and the concepts of luminosity and saturation, it proceeds to exerciseson the spatial, material, and optical mixing of colors and the effects of color contrasts and ends with color harmonies at the conclusion of the course.

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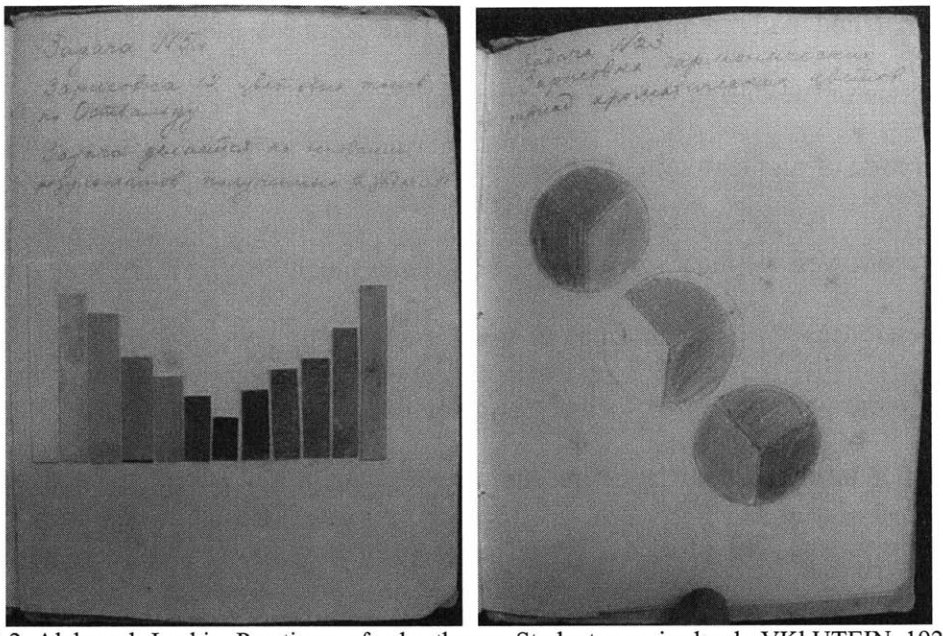
[303] Russian State Archive of Literature and Arts (RGALI). VKhUTEMAS Collection (Fond 681). Program of the course "Color Studies" for VKhUTEIN prepared by N. T. Fedorov, 1929.

[304] N. T. Fedorov, Program of "Color Studies," 2.

[305] Aleksandr Fedorovich Lushin (1902-1994) was a Soviet painter and stage set designer, who studied at VKhUTEIN in 1928-1930 and at the Leningrad Academy of Arts in 1930-1933, subsequently working in many Soviet theaters. About him, see Militsa Pozharskaia, *Aleksandr Fedorovich Lushin.* Moskva: Khudozhnik RSFSR, 1985. The book at the Getty Research Institute (Vkhutemas collection).



Figs. 3.1-3.2. Aleksandr Lushin, Practicum of color theory. Student exercise book, VKhUTEIN, 1928-1930. A sketch of twelve color tones (after Ostwald) [left]; A sketch of harmonic triads of chromatic colors [right].

In spite of the effort to teach students the latest developments in color science, the program of VKHUTEIN, designed by a Cézannist painter Konstantin Istomin, still left space for its subjective interpretation by an artist, insisting—in the spirit of Malevich—on an artist's right to be guided by his or her intuition rather than the laws of science:

> The discipline of color aims at studying color as an optical and painterly phenomenon, which possesses certain quantities and is capable of building a form. Connecting color with major laws postulated by the science of color, the program does not assume an abstract color, received from a ray of sun, but does always mean the paint, with which a painter operates, and assumes a right to make certain observations, which a science does not consider sufficiently precise and which follow a somewhat subjective tendency of perception, but which are justified by colorful works of art or are deductively derived from the laws and relationships, already established by science.[306]

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[306] Konstantin Istomin, "Programma po distsipline tsveta (1yi kurs Osnovnogo Otdelenia)" ["Program of the discipline of color (1st year of the Basic Department"] (1924). RGALI, VKhUTEMAS Collection. Published in Selim O. Khan-Magomedov, *Vkhutemas: 1920-1930 : Tekstil', Skul'ptura, Zhivopis', Grafika, Keramika, Metall, Derevo, Arkhitektura* [*VKhUTEMAS: 1920-1930: Textile, Sculpture, Painting, Drawing, Ceramics, Metal, Wood, Architecture*] (Moskva: Lad'ia, 1995) 383-384. Russian original: «Дисциплина цвета имеет целью изучение цвета, как оптического и живописного явления, имеющего определенные количества и способного построить форму. Связывая цвет с основными законами, установленными наукой о цвете, программа не предполагает отвлеченного цвета, полученного из солнечного луча, но всякий раз подразумевает краску,

VKhUTEMAS's emphasis on the artistic, formalist understanding of color theory as a study of the combinations and mutual effects of various tones reflected mainstream thinking about color in Soviet Russia during the 1920s: associated with painting and within the framework of aesthetic formalism, color was, first and foremost, interpreted as an instrument of visual expression on a plane. However, this interpretation did not preclude laboratory physiological research. On the contrary, painters conducted a number of experiments to investigate the aesthetic properties of color. Some of the most influential among those were conducted in Petrograd, subsequently Leningrad, by Mikhail Matiushin. Trained as both a musician and an artist, before the 1917 revolution Matiushin was one of the leaders of Russian futurism, composing the futurist opera "The Victory Over the Sun" and editing some the best-known futurist books.[307] In the the aftermath of the revolution, he devoted himself to developing his concept of "organic culture" and to theories of artistic vision. When in the late 1920s wallpainting emerged as a separate discipline, Matiushin actively entered the debate about its status and methodology, and proposed basing the latter on his theories of complementary colors. His student Boris Ender, who left Leningrad for Moscow in 1927 to join the Maliarstroi team, was a major proponent of his teacher's ideas beyond his circle and provided a link between

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которой оперирует художник и позволяет себе право дать некоторые наблюдения, не считающиеся наукой вполне точными и имеющие при восприятии несколько субъективный уклон, но оправдываемые цветыми памятниками искусства или дедуктивно выведенные из установленных уже наукой законов и отношений». For an abridged English translation of the program see also "Programme for a Course in Colour. VKhUTEMAS. Institute of Artistic Culture (1923)," *Licht Und Farbe in Der Russischen Avantgarde*, 478-479.

[307] "Victory over the Sun" (Russian, "Pobeda nad solntsem") (1913) was "the first Futurist opera," its music composed by Matiushin, libretto written by Aleksei Kruchenykh, and costumes and stage set designed by Kazimir Malevich. The house of Matiushin and his wife Elena Guro in St. Petersburg was the place of meeting of Russian Futurists, and the two also founded their own publishing house Zhuravl' to publish Futurist books.

Matiushin's theory of color and the nascent discipline of wallpainting, continuing research on color perception in the direction started by his teacher.[308]

But let us return to the origins. One day in the early 1920s, while walking along the banks of the Neva in Petrograd (formerly St. Petersburg) the landscape watercolorist Albert Benois[309] saw a group of people painting the river while facing the opposite direction. Initially convinced that he had encountered a group of lunatics, he soon recognized among them Matiushin and his students, who practiced artistic "seeing" with the backs of their heads.[310] Matiushin formulated his concept of "expanded seeing" [*rasshirennoe smotrenie*], as a fuller, more precise and correct kind of visual perception under the influence of the theory of the "fourth dimension" of theosopher Petr Uspenskii (Ouspensky).[311] The program of his group Zorved (from archaic Russian roots "zor," from *zret'*, to see, and "ved," from *vedat'*, to know), asserted a 360° of

[308] Boris Vladimirovich Ender (1893-1960) entered Petrograd State Independent Artistic Studious in 1918, where he studied first with Kuz'ma Petrov-Vodkin and then with Matiushin. After graduating in 1923, he proceeded to work under Matiushin in the Department of Organic Culture of Leningrad State Institute of Artistic Culture (usually abbreviated to GINKhUK) and exhibited with the Workshop of Spatial Realism at the Petrograd/Leningrad Academy of Arts (1918-1926), headed by Matiushin.

[309] Albert Nikolaevich Benois (1852-1936) was a brother of the more famous artist and art critic Alexandr Benois.

[310] From A[nna] P[etrovna] Ostroumova-Lebedeva, *Avtobiograficheskie Zapiski* [*Autobiographic Notes*], in 3 vols., vol. 3 (Moskva: Izd. Akad. chudozhestv, 1951) 20. Quoted in Jelena Rakitin and Wassily Rakitin, „Als Künstler sind Sie kein so versierter Praktiker wie wir," *Matjuschin und die Leningrader Avantgarde : eine Ausstellung im Badischen Kunstverein Karlsruhe, 27. April - 9. Juni 1991*, ed. Heinrich Klotz (Stuttgart: Oktogon, 1991); and in Tillberg, *Coloured Universe and the Russian Avant-Garde*, 157.

[311] Ouspensky's first book, *The Fourth Dimension*, appeared in 1909; his second book, *Tertium Organum*—in 1912.The fourth dimension, for Ouspensky, was the truth, which was beyond understanding by the limited capacities of reason and human senses; it was the reality encountered by the soul after death. It could not, therefore, be comprehended rationally; instead, a higher sense of space could be developed by developing intuition. Matiushin's "Of the book by Gleizes and Metzinger *Du Cubisme*" and "The Artist's experience of a new dimension" bear a particular impact of Uspenskii's ideas. More on Matiushin and Uspenskii see Tillberg, *Coloured Universe and the Russian Avant-Garde*, 178-181.

seeing as a new, fuller and more precise way of artistic vision. In Zorved manifesto (1923) Matiushin wrote:

> *Zorved* is the essential act of vision (a visual field of 360°) its genesis on the pristine virgin ground of experience.
>
> *Zorved* is characterized by a physiological change of the former way of looking and entails a completely different method of representing the visible.
>
> *Zorved* incorporates for the first time into the field of vision the previously closed 'rear plane'; all the space remaining 'outside' the human realm, as a result of incomplete experience.
>
> New facts have revealed the influence of space, light, color and form on cerebral centers throughout the neck. A number of experiments and observations carried out by the artists of *Zorved* clearly establish the sensitivity to space of the visual centers situated in the occipital part of the brain. This unexpectedly unveils a strong force of spatial perceptions, and since the most precious gift for the human being and artist is to know space, from this starts a new step and rhythm of life that does not flow into any form labeled 'left' or 'right.'[312]

Matiushin's expanded seeing was based on the so-called Purkinje effect (or Purkinje shift), a phenomenon first recorded by the Czech anatomist Jan Evangelista Purkinje (Purkyně), who in 1825 pointed out that the colors of the red end of spectrum were perceived as brighter at the light of the day and duller under a twilight, while blues, on the contrary, acquired luminosity until, in darkness, the distinctions of color gave place to the contrast of light and shade.[313] Moreover, if during the day the sight was focused at a 30-60° angle, in twilight one could observe a field of 180 degrees. The Purkinje effect was explained at the turn of the twentieth century by a German physiologist Johannes von Kries, who proposed that retina consisted of two types of photo-receptors: cones, which were situated in the center of the eye and were

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[312] Matiushin, "Ne iskusstvo, a zhizn'," *Zhizn' iskusstva* [*The Life of Art*] No. 20 (1923): 15. English translation by Tillberg, p. 139-140 (140).

[313] See Jan Evangelista Purkinje, *Neue Beiträge zur Kenntniss des Sehens in Subjectiver Hinsicht* (Reimer: Berlin, 1825).

responsible for daytime vision, and peripheral rods, which became active at the lower levels of light.[314] For years, the theory of cones and rods remained the dominant explanation of the mechanism of seeing, and was taught in the VKhUTEMAS color theory courses and beyond. Referring to this cutting-edge physiological research of von Kries, Matiushin proposed combining central vision, associated with a narrow focus, precision, and a clear rendition of color, with peripheral vision, characterized by broad focus and an ability to capture light and contrast.[315]

Moreover, Matiushin aspired to expand the angle of seeing even further, to a full 360°. To do so, one would have had to see with the back of her head, and indeed, in his physiological experiments, the artist discovered that the occipital part of brain acted as an independent visual center that was not connected to the eye.[316] The brain, according to Matiushin, was able to obtain a visual non-retinal perception directly through the skull; thus, his pedagogical program strove to develop in his students the ability for backside seeing.[317] In an exercise that Matiushin frequently assigned, he asked the students to select a passer-by and to keep track of both that person's and

[314] See Johannes von Kries, *Die Gesichts-Empfindungen Und Ihre Analyse* (Leipzig: Veit, 1882); Johannes von Kries, *Abhandlungen Zur Physiologie Der Gesichtsempfindungen Aus Dem Physiologischen Institut Zu Freiburg* (Hamburg: Voss, 1897).

[315] On Matiushin's use of the Purkinje effect, see Tillberg, "Coloured Universe and the Russian Avant-Garde,"152-154; and Alla Povelikhina, "Antropologizm Matiushina: sistema 'ZOR-VED' pri vospriiatii natury" ["Matiushin's anthropologism: Zor-Ved system at an education of nature"], *Organika. Bespredmetnyi mir prirody v russkom avandarde XX veka"* [*Organics. Abstract World of Nature in Twentieth-Century Russian Avant-Garde*] (Moskva: RA, 2000) 43-49.

[316] According to contemporary science, the occipital part of brain cortex is most intensely activated by visual stimuli. Tillberg, *Coloured Universe and the Russian Avant-Garde*, 157 (footnote 101).

[317] Although Matiushin's program of neck seeing might now seem grotesque, it did in fact follow the lead of psychological experiments. As reported by Borchert in *Maliarnoe delo*, M-r Burrow of the London Association for the Blind had determined that the blind felt themselves better in a blue room than in a red one. See Erich Borchert, "Krasochnoe oformlenie zhilishch" ["Color Design of Dwellings"], *Maliarnoe Delo* [*Wallpainting*] No. 1 (1931): 8-9.

their own movements, connecting the two. Later, after the passer-by disappeared behind the students' backs, they had to keep track of his movement without turning the head backwards.[318]

As expanded seeing allowed for a simultaneous observation of the object (the focus) and its background (the periphery), Matiushin could embark on an exploration of the relationship between the two. As a painter, he was particularly interested in the contrasts of color connected with the shift of the eyeball between the object and its context.[319] Along this shift, so Matiushin claimed to have discovered, in the brain of the beholder, the background acquired the color complementary to the one of the object, while a third, psychological, color appeared around the object as a halo until the main color finally died out under the impact of the complementary. [320] The addition of the third color (which he called the linking [*stsepliaiushchii*] one) to the dyad of the primary and the complementary formed the core of Matiushin's theory of painting. It allowed him to overcome the effect of mutual dulling that occurred when contrasting colors were mixed with each other, and thus establish a visual equilibrium between an object and its context.

As Matiushin's group explored the effect of complementary color that appeared psychologically when one closed one's eyes after looking at a colored shape, it had to approach

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[318] The exercise was subsequently complicated by the task of keeping track of several people moving into different directions. Boris Ender, "Material k issledovaniiu fiziologii 'Dopolnitel'nogo smotrenia (Dnevnik opytov opisania mestnosti s poviazkoi na glazakh)" ["Materials to a study of physiology of 'Complementary seeing' (A diary of attempts at describing an environment with a band on the eyes"]. RGALI, Boris Ender collection.

[319] See Larisa Zhadova, "Tsvetovaia sistema M. Matiushina" ["Matiushin's color system"], *Iskusstvo* [*Art*] No. 8 (1974): 38-42. Reprinted in: Mikhail Matiushin, *Spravochnik po tsvety. Zakonomernost' izmeniaemosti tsvetovykh sochetanii* [*Color Handbook. The Laws of Variability of Color Combinations*] (Moskva: Izdatel' D. Aronov, 2007) 5-12 (9).

[320] Matiushin determined that a perception of color had three temporal periods. At first, neutral background acquired a pale complementary color. Then, the main color was surrounded by a sharp halo of the complementary color, and a third color appeared in the environment. Finally, the main color died out under the influence of the complementary color. Mikhail Matiushin, *Spravochnik po tsvety*.

color contrast as a cognitive rather than retinal phenomenon, explaining it as a function of the brain rather than the eye. Matiushin then turned to recent physiological research in order to locate the centers of the brain responsible for production and fixation of a psychological color effect. The common physiological knowledge was that two types of visual centers existed in the brain, the first located in the middle of the brain, and the second—in the cortex, Matiushin connected the less-well-known cortex centers with the psychological phenomenon of complementary color. These cortex centers, Matiushin discovered, were concentrated in the posterior, occipital part of the brain. In a GINKhUK laboratory experiment, a specially constructed black room was divided into two parts by a solid screen. In the first part of the room, Matiushin placed an electric lamp covered with color sheet, while in the second, the subject was seated with his back "facing" the screen, with a the distance between the subject and the object between one and four meters. The only opening in the screen was a small hole, which was hermetically closed with a hose that ended in a cap on the head of the subject. The only point in the second part of room that the beam of light from the first part could reach was the occiput of the subject. After the subject's vision and mind were adjusted to the darkness of the room and all previous impressions disappeared, the experimenter turned on the lamp, asking the subject—who was left unaware of the color of the screen used to cover the lamp and thus of the nature of the beam that her occiput was confronting—to describe her impressions. Although, compared to experiments with the retinal vision, the subjects needed significantly more time to fix and record their impressions, in the end they inevitably succeeded doing it, describing their sensation as a complex networks of interrelated psychological visual phenomena. The physiological discovery of Matiushin was—so he claimed—that the color perceived by the subject was not the one of the

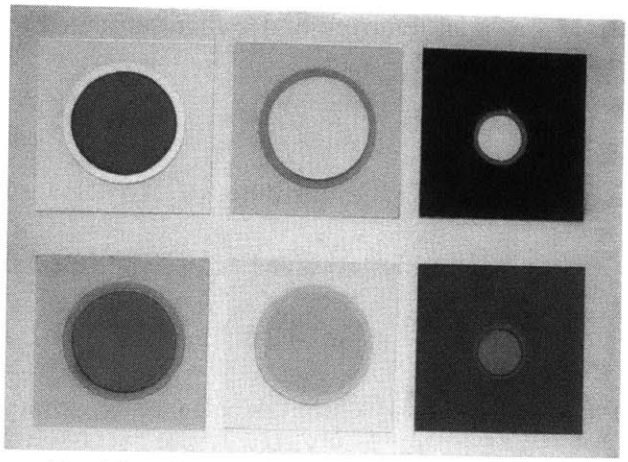

Fig. 3.3. Mikhail Matiushin and Maria Ender. The change of color shape and color background in time, with the eyes closed. 1930s.

color screen, but its complement. Complementary vision, Matiushin concluded, was a result of the perceiving activity of the occipital cortex of the brain, which bypassed the eye.

Matiushin's students actively furthered and developed their teacher's theory. The most significant contribution was that of the siblings Ender, painters Boris (1893-1960), Ksenia (1894-1955), Maria (1897-1942) and Geogrii (1898-1963), all of whom studied under Matiushin and were members of Zorved.[321] Developing Matiushin's theory, Maria Ender studied the complementary perception of form, while Boris Ender explored complementary spatial perception, developing a theory of "complementary seeing" [*dopolnitel'noe smotrenie*]—a notion that referred both to Matiushin's "expanded seeing" [*rasshirennoe smotrenie*] and his interest in complementary colors.[322] In August and September 1924, Boris Ender conducted a series of experiments near Leningrad that explored the perception of a blindfolded subject. In one of them, he tightly covered his eyes with a kerchief and asked his collaborators to guide him towards the endpoint—a place that he had never seen before. Remaining blindfolded, for half an hour he recorded the visual impressions that he

[321] Maria Ender, one of Matiushin's closest and long-lasting collaborators, wrote an introduction to the *Color Handbook* in a desperate attempt to save their work and Matiushin himself from the accusations in formalism, inevitable in the new situation of a toughed artistic control and the anti-modernism campaign that took a new turn in 1932.

[322] Complementary seeing, for Ender and Matiushin, was not only the effect of complementary colors, but "every spatial volume perception, which is complementary to a direct one." Ender, "Material k issledovaniiu fiziologii 'Dopolnitel'nogo smotrenia," 1.

received through the back of his head; the blindfold was then removed and Ender continued to record the impressions received through his eyes.

In January 1927, GINKhUK was merged with the State Institute of Art History [*Gosudarstvennyi institute istorii iskusstvs*], where Matiushin received an Experimental Laboratory of Physical-Physiological Foundation of Fine Arts,[323] while Maria Ender became his assistant. Meanwhile, Boris Ender became an assistant at the Committee of Contemporary Artistic Industry,[324] headed by architect Aleksandr Nikol'skii, the leader of the Leningrad section of the constructivist group OSA.[325] There, Ender started work on the projects for wallpainting, and shortly afterwards moved to Moscow, where wallpainting was at that time actively promoted by the officials and developed as a separate branch of architecture by the Constructivists at OSA and Stroikom and the Rationalists at ASNOVA.[326] Matiushin too discovered in wallpainting a possibility of rescuing abstract art, using his system of color triads to claim expertise in this field. The claim was substantiated in 1932 when the State Publishing House of Fine Arts in Leningrad published the results of a project, in which Matiushin was engaged since 1929, as *A Handbook of Color. A Pattern of the Convertibility of Color Combinations*—a set of tables demonstrating

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[323] Russian: Eksperimental'naia laboratoria fiziko-fiziologicheskikh osnov izobrazitel'nogo iskusstva.

[324] Russian: Komitet sovremennoi khudozhestvennoi promyshlennosti.

[325] On Nikol'skii's approach to color in architecture, see: Moisei Ginzburg, "Itogi i perspektivy" ["Outcomes and Perspectives"], *Sovremennaia Arkhitektura* [*Contemporary Architecture*] No. 4-5 (1927): 112-118 (116), and Selim O. Khan-Magomedov, *Aleksandr Niko'skii* (Moskva: Russii avangard, 2009) 48-62.

[326] In 1928, in Leningrad Institute of Civil Engineers, Nikol'skii created a Scientific-Research Cabinet and, within it, a Laboratory of Color, which was headed by Maria Ender. Vera Shueninova-Nikol'skaia, the architect's wife, was a volunteer there, focusing on the problem of the relationship between color and form and the principles of exterior coloration of buildings. See Alla Povelikhina, "GINKhUK. Otdel Organicheskoi Kul'tury" ["GINKhUK. The Department of Organic Culture], *Organika. Bespredmetnyi mir prirody v russkom avangarde* [*Organics. An Abstract World of Nature in Russian Avant-Garde*] (Moskva: RA, 2000) 50-58 (55).

primary, context, and linking colors that were recommended for use on internal and external walls of buildings.[327] Matiushin's color tables offered a ready-made, mass-produced recipe for the calculated visual effect of color combinations that always looked brilliant and fresh.

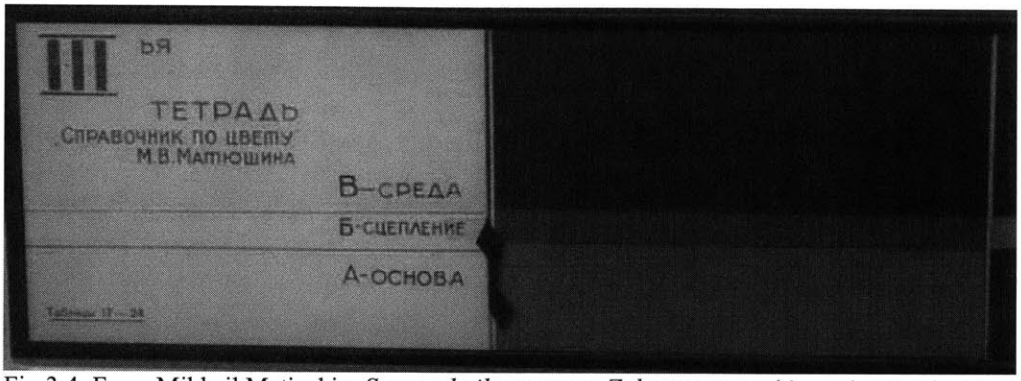

Fig.3.4. From Mikhail Matiushin, *Spravochnik po tsvety. Zakonomernost' izmeniaemosti tsvetovykh sochetanii* [*Color Handbook. Laws of Variability of Color Combinations*]. Band 3, Table 17. А—Primary Color; Б—Linking color; В—Context color.

Developed by Ender, Matiushin's theory of complementary seeing, in spite of its manifest scientific and experimental character, bore many traces of a theosophic interest in the irrational. Turning a color into its opposite, complementary seeing produced a reversed image of reality—or rather represented the reality's other, normally concealed side. The visual activity of the brain that Matiushin discovered went unnoticed by the subject and thus belonged not to the domain of the cognitive, but to the unconscious. The occipital part of the brain cortex provided visual perception that was mediated neither by retina, nor by areas of the brain,\ responsible for cognitive, analytical activity. Like the images of the Freudian unconscious, the images produced by neck vision, were obscure, dark, and left in the periphery of consciousness. Nevertheless, they played a key role in our perception of reality, providing a context for the retinally perceived

[327] M[ikhail] V[asil'evich]. Matiushin, *Spravochnik po tsvetu. Zakonomernost' izmeniaemosti tsvetovykh sochetanii* [*Color Handbook. Laws of Variability of Color Combinations*] (Leningrad: Gosudarstvennoe izdatel'stvo izobrazitel'nykh iskusstv, 1932). Due to the difficulty of the technological process, the illustrations to the book had to be hand colored and were performed by Matiushin's students I. Val'ter, O. Vaulina, S. Vasiuk, V. Delakroa, D. Sysoeva, E. Khmelevskaia. This explains the low circulation of the book, which comprised 400 copies.

object and thus determining its final appearance in consciousness. A consideration of complementary seeing—paying attention to the context, to the relationship between the object and its periphery, and to the metamorphosis of colors and shapes that happened with the change of the context (when, for instance, the subject was physically moving or flipping the pages of a book)—allowed the painter to control the psychological impression that an artwork produced in the mind of the beholder: the luminosity of color, the perceived size and shape of volumes and other elements of perception.

Space and Movement

At VKhUTEMAS/VKhUTEIN and within the system of formalist aesthetics in general, color was predominantly associated with painting. Accordingly, many modernist architects, banished color from their work as an old-fashioned quality, bound to individualistic subjectivity, aestheticism, and emotionality. They saw color as distracting attention from the aspects of space and form and thus tied to the Loosian crime of ornament. When Mies van der Rohe administered the design of the Weissenhofsiedlung in Stuttgart, a showcase of modernist residential architecture, the sole condition placed in front of the participating architects was that the buildings had to have flat roofs and white exteriors.[328] Two years before Weissenhof was opened for public in 1927, Le Corbusier formulated his famous "law of Ripolin," named after French paint company that produced white enamel. Connecting good architecture with the white, the law

[328] Mark Wigley, *White Walls, Designer Dresses: The Fashioning of Modern Architecture* (Cambridge, MA: MIT Press, 1995) xiv.

of Ripolin emphasized both formal purity and the physical and moral hygiene with which white was associated.[329]

However it was soon realized—not the least by Le Corbusier, who was a painter as well as an architect—that color could be not an enemy, but a friend of architecture. In particular, interpreted as tone, color was defined through the intensity of white or black, and could thus express form like no other medium; it was the gradations of tone that Corbusier suggested for use in architecture, while reducing the number of pure colors to two or three.[330] In a special 1929 issue of the Constructivist architectural journal *Sovremennaia Arkhitektura* [*Contemporary Architecture*] devoted to architectural polychromy, the editor of the journal and the major theoretician of architectural Constructivism Moisei Ginzburg published an article by Boris Teplov that discussed the distinction among colors made by his German colleague David Katz. Following Katz, Teplov divided colors into surface [*poverkhnostnye tsveta /Oberflächenfarben*],

[329] See Le Corbusier, "Le lait de chaux : La loi du Ripolin," *L'art decoratif d'aujourd'hui* (Paris: G. crès et cie, 1925) 187. Ripolin was a paint and enamel company, whose products were famously used by Picasso and Le Corbusier.

[330] In "'Salubra,' Source text of 'Polychromie architecturale'" Le Corbusier wrote: "The painter intervenes here. Each color (vermillion differently from carmine, black differently from ultramarine, etc.) possesses degrees where its richness, its opulence on the one hand, its signification on the other, can lead to a clear purity; this observation can also be negatively formulated: each color, during its transition from lighter to darker, possesses drab, or unpleasant, hollow, non-expressive regions, that the painter carefully avoids. On a painting, the classification is more subtle and relative, because a tone is strongly influenced by numerous other colors or values which immediately surround it. As in architecture, only two or three colors or values are present, the choice of expressive values is more categorical; a judgment is necessary that can be formulated this way: this 'tone-value' is more suitable for the wall and its specific quality is more characteristic for it." "'Salubra,' Source text of 'Polychromie architecturale', Heer, *The Architectonic Colour*, 217-218 (218). On the interaction of color and tone see also Le Corbusier, "Polychromie architectural." English translation as "Architectural polychromy. A study made by an architect (also involved in the adventure of contemporary painting) for architects" in *Polychromie architecturale: Le Corbusiers Farbenklaviaturen von 1931 und 1959 = Le Corbusier's color keyboards from 1931 and 1959*, ed. Arthur Rüegg, vols. 1-3. Vol.1 (Basel, Boston, Berlin: Birkhäuser, 1997) 94-141; and in Jan de Heer, *The Architectonic Colour: Polychromy in the Purist Architecture of Le Corbusier*, transl. George Hall (Rotterdam: 010 Publishers, 2009) 219-238.

film [*besfakturnye tsveta / Flächenfarben*] and spatial [*rasprostranennye tsveta/Raumfarben*].[331] Whereas the last category dealt with transparent colors, rarely encountered in life, the first two groups, distinguished through brightness and saturation, were frequent and important for architecture. Bright and saturated film colors were glossy, immaterial and abstract, while surface colors were material and solid, connected to the object they covered. Being mixed with black or white and thus less saturated with pigment, especially in their pure forms, surface colors were able to convey such architectural properties as facture, form, and distance.

It was this form-making property of color tones that Le Corbusier had in mind when, in in a 1928 letter to Italian architect Piero Bottoni, he called colors "creators [*créatrices*] of space." Color, he argued, played an important architectural role as it could make planes look closer or farther away, causing parts of architectural constructions "disappear" within the landscape; color could become a camouflage that destroyed the weight and density of volumes.[332] Le Corbusier's reasoning almost literally repeated that of German formalist art historian August Schmarsow, who in 1893 used the psychological notion of space to define architecture: "Our sense of space and spatial imagination press toward spatial creation [*Raumgestaltung*]; they seek their satisfaction in art. We call this art architecture; in plain words, it is the creatress of space

[331] David Katz, *Die Erscheinungsweisen der Farben und ihre Beeinflussung durch die individuelle Erfahrung.* (Leipzig, 1911) 1-30. English translation 1935. In his article "Prostranstvennye i 'vesovye' svoistva tsveta" ["Spatial and 'weight' properties of color"] (*Maliarnoe Delo* [*Wallpainting*] No. 2 1931: 5-8) Teplov referred to *Raumfarben* as *prostranstvennye.*

[332] See Wigley, *White Walls, Designer Dresses*, 217. Among Soviet psychologists, Teplov was especially interested in the camouflage potential of color. On architecture and camouflage during a later period, see Jean-Louis Cohen, *Architecture in Uniform: Designing and Building for the Second World War* (Montréal: Canadian Centre for Architecture, 2011).

[*Raumgestalterin*]."[333] Exemplified by the VKhUTEMAS system of introductory courses, this definition of architecture as space became widely accepted by modernist architects, and Le Corbusier was certainly paraphrasing it when he paired color and space. Yet in doing so, he achieved nothing less than an identification of architecture with color—a dissolution of architecture as a material reality and a reconstitution of it as a fully psychological phenomenon. In a 1932 letter to a student of Kiev Institute of Construction Viktor Nekrasov (who was to become a major Soviet writer and later a political dissident and émigré) and his fellow-students, Le Corbusier pointed to color as one of the fundamental principles of his approach to architecture: "An architect may thus work with color as he works with proportions, or rather (if you will), as he would work with the geometric relations between surfaces or volumes."[334] Purism—the art movement developed by Le Corbusier (or rather by Charles-Edouard Jeanneret, Le Corbusier's real name, which he used as his signature as a painter) alongside Amédée Ozenfant and Fernand Léger—rejected the dulled palette of analytic Cubism, to which it was otherwise greatly indebted, without sacrificing the Cubist concern with form: painting itself was redefined by the Purists as an expression of form through color.[335]

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[333] August Schmarsow, "The Essence of Architectural Creation," *Empathy, Form, and Space: Problems in German Aesthetics, 1873-1893*, 287.

[334] Quoted in S. Frederick Starr, "Le Corbusier in the USSR: New Documentation," *Oppositions* No. 23 (1981): 123-137 (132). Le Corbusier's letter was sent in response to the students' assurances of solidarity after the announcement of the results of the first tour of the Palace of the Soviets Competition.

[335] The relation of form and color also had been the subject of interest at VKhUTEMAS. At their propedeutic workshops, Cezannists Aleksandr Osmerkin and Aleksandr Drevin taught courses on the relationship between color and form: "Expression of Form through Color" (Osmerkin) and "Simultaneity of Color and Form" (Drevin). Likewise, Constructivist Gustav Klutsis, who taught the propedeutic discipline "Color" between 1924 and 1930, approached color as surface, exploring the interaction of color with planar and volumetric form and the surface of the material.

The art theories of Le Corbusier—an idol of Soviet modernist architects, particularly the Constructivists—and his Purist associates were also known and well-respected in Moscow. In the same 1929 issue of *Sovremennaia Arkhitektura* devoted to color in architecture, Ginzburg published just one article devoted to an artist—Fernand Léger—giving the majority of color illustrations in the issue to reproductions of Léger's works.[336] The editors of the journal explained that they saw his work not as easel painting, but as an analytical exercise in exploring the spatial and surface role of color, a prerequisite for future laboratory experiments.[337] Indeed, Léger's palette and form-making techniques inspired Ginzburg's first color experimentation. Already in the early 1920s, teaching at MVTU (*Moskovskoe Vysshee Tekhnicheskoe Uchilishche*, Moscow Higher Technical College), he conducted an experiment with the purpose of defining the rules of color in architectural space and of compensating psychologically for its functional imperfections. The architectural problems to correct in the given situation of MVTU space were the darkness of the room, which faced north and overlooked a tiny courtyard, and its visual division due to several small vaults on the ceiling. To enhance the luminosity of window light through a stark contrast, Ginzburg painted the external wall black and also applied black to the ceiling to eliminate the perceived partitioning of the room. The wall opposite to the windows, however, received a bright lemon-yellow coloration, which, according to Ginzburg, due to its nonabsorptive character endowed even a diffused ray of light with a sunny saturation. The two remaining walls Ginzburg painted orange in order to give the cold and dark room more

[336] On Léger's views on color and architecture in the 1920s and 1930s, see his "L'Architecture polychromie," *L'Architecture Vivante,* Autumn/Winter 1924, and his lecture "Les rapports de l'architecture et de la peinture," published as *Fonctions de la peinture*, Paris, 1965 (German translation: "Mauern, Architekten und Maler," *Mensch. Machine. Malerei.* Bern, 1971).

[337] Redaktsia SA [*SA* Editorial board], "Pochemu my pomeshchaem zhivopis' Lezhe" ["Why we are publishing Léger's painting"], *Sovremennaia Arkhitektura* [*Contemporary Architecture*] No. 2 (1929): 58.

"warmth" and to provide contrast to both black and yellow and thereby to accentuate the spatial properties of the room.[338]

The use of color as a spatial modulator was developed by ASNOVA, which launched a research on spatial properties of color as one of its priorities. Moreover, more so than their Constructivist rivals, the Rationalists exhibited an interest in enhancing the formal expressivity of architecture: Nikolai Travin in the Khavsko-Shabolovkii residential complex and Georgii Mapu in Budennovskii village, each transformed the external walls into red and white geometric compositions.[339] Before the arrival of Scheper, who reoriented Maliarstroi towards a functionalist, Constructivist line of work, ASNOVA was quite successful in acquiring patronage and a certain theoretical dominance over Maliarstroi. The Rationalists had long expressed an interest in color as a strong factor of psychological impression: as early as 1926, for instance, Ladovskii prepared a scheme for the painting of the facades of houses on Miasnitskaia street in Moscow.[340] However, by the time Maliarstroi was created, Ladovskii had left ASNOVA in a protest against the formalism and "scholasticism" of his former students, who became preoccupied with solving formal architectural and compositional problems. It was exactly these problems that ASNOVA now attempted to solve with wallpainting. When the first issue of *Maliarnoe Delo* went to press in 1930, it included a welcoming salute from ASNOVA, which hailed "an elucidation, from both artistic and a technical points of view" of color "as a mighty

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[338] Moisei Ginzburg, *Zhilishche: opyt piatiletnei raboty nad problemoi zhilishcha* [*Residential Construction: an Experience of Five-Year Work on the Problem of Residential Construction*] (Moskva: Gosstroiizdat, 1934) 93-94.

[339] On Travin's project, see Vitalii Lavrov, "Uchastie 'ASNOVA' v zhilishchnom stroitel'stve Mossoveta" ["The participation of 'ASNOVA' in Mossovet residential construction"], *Stroitel'stvo Moskvy* [The Construction of Moscow] No.1 (1928): 14-16.

[340] "Doma ili ulitsy? Otkrytoe pis'mo Mossovetu" ["Houses or Streets? An Open Letter to Mossovet"], *Izvestia ASNOVA* [*ASNOVA Newsletter*] No.1 (1926): 6.

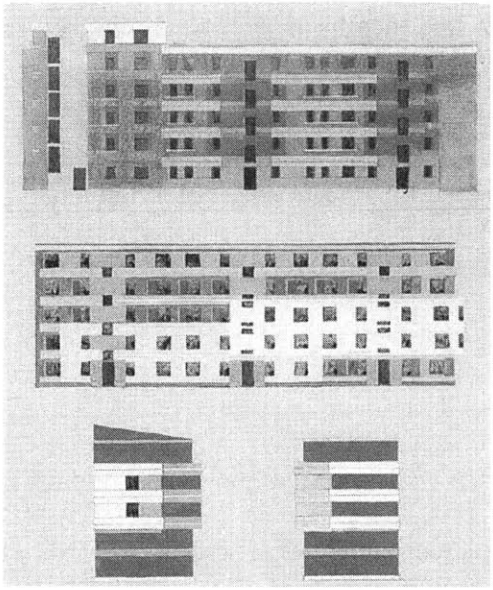


Fig.3.5. Khavsko-Shabolovskii residential complex, Plans of exterior coloration. Nikolai Travin, 1928.

tool of artistic expressivity."[341] In an open meeting of ASNOVA, devoted to the project of re-painting of Moscow in February 1930, Rukhliadev claimed that the major purpose of color in a city was an aesthetic effect (which was, in fact, more important than the aspects of hygiene), which could be viewed as surface and spatial tasks.[342]

When in November 1929 a discussion on "The Planned Project for a Re-Painting of Moscow" was initiated, ASNOVA played a central role in formulating its terms and framework. Among the participants of the discussion, which continued throughout the early 1930, were Leiba Antokol'skii from Maliarstroi; Viktor Balikhin, Aleksei Rukhliadev, V. Petrov and Aleksandr Sil'chenkov from ASNOVA; Gustav Klutsis from VKhUTEIN; members of the artistic groups AKhRR (Association of Artists of Revolutionary Russia), "4 Arts," and "Being" [*Bytie*], as well as the representatives of various municipal bureaucracies.[343] In spite of some unavoidable disagreements, the parties concurred that the painting of the street facades of Moscow buildings had to be centralized and subjected to a uniform plan that would regulate and organize the city. With the participation of ASNOVA, Antokol'skii prepared and submitted three alternative projects for discussion by architectural groups. In the first, so-called

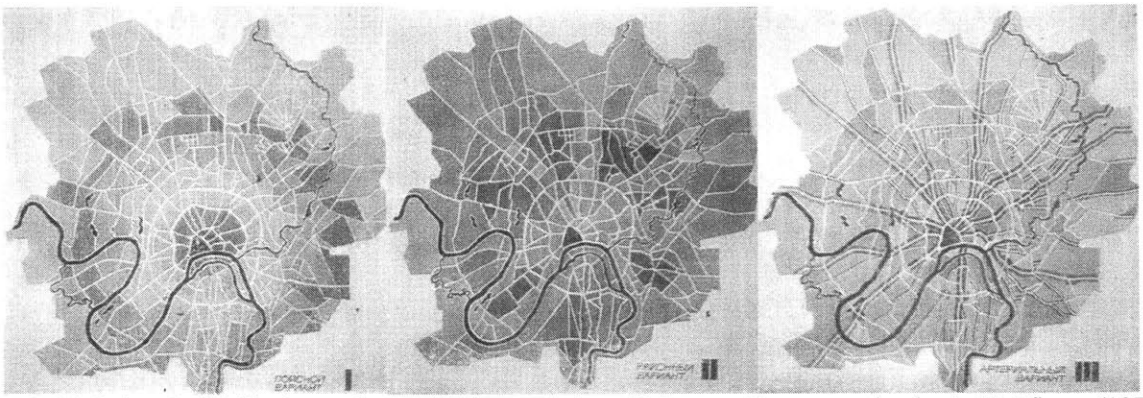
[341] "'ASNOVA' privetstvuet vykhod v svet zhurnala 'Maliarnoe Delo'" ["'ASNOVA' welcomes the launch of the journal 'Maliarnoe Delo'], *Maliarnoe Delo* [*Wallpainting*] No. 1-2 (1930): 53.

[342] The minutes of the meeting were published in L[eiba] Antokol'skii, "O planovoi okraske gorodov" ["On a planned painting of cities"], *Maliarnoe Delo* [*Wallpainting*], No.3 (1931): 5-13 (11-13).

[343] See Antokol'skii, "O planovoi okraske gorodov."

belt, version, rings of prismatic colors radiated from the red center (the Kremlin and the Red Square) not unlike Delaunay's circles of color perception. The innermost part of the city was painted in warm red-orange hues, which gradually merged into yellow-green further from Red Square, while the middle ring of the city was given green to ice-blue tones transforming into blue and violet on the periphery. Finally, in the suburbs, the violet turned into grey and white. The second, zonal, version of the scheme resembled Newton's color wheel: in this model, each district of the city received one of the seven colors of the spectrum. However, since within each district the intensity of coloration increased towards the center and decreased towards an almost white periphery, Newton's wheel was transformed into Ostwald's color triangle. Finally the third, arterial version suggested painting every major thoroughfare of Moscow (all of which ran from the periphery towards the center) to shades of red, brighter in the center and whiter towards the edges of the city. In addition, all major squares in the city were to receive their own distinctive color.[344] While the belt version would inform visitors about their distance from the Kremlin, the zonal version offered a more complex, double-level orientation scheme, allowing them to know which part of the city they were in and at the same time to understand the center/periphery relationship by looking at the colors of outside walls. The most complex and the closest to the informational program of *Signaletik*, the arterial version informed the visitor about the importance of a street and as well as starting and ending points. In all the versions, the streets, from major boulevards to side lanes, were treated as corridors leading from a square of one color to a square of another, and the tone of houses was gradually modified to allow a seamless transition from one color to the other.

[344] Antokol'skii, "O planovoi okraske gorodov," 6-8.



Figs. 3.6-3.8. Antokol'skii's three schemes for the repainting of Moscow. Reconstruction by A. V. Efimov (1978).

Antokol'skii's schemes bore a clear relation to ASNOVA compositional theory, above all to the theory of architectural rows, which was developed in the mid- and late-1920s as an attempt to restructure the principles of architectural composition to be similar to those of music. A linear sequence of elements arranged as a pattern of objects with different properties set at intervals of various lengths, compositional rows were based on a rhythmical progression. Just as an underlining musical rhythm structures and organizes melody, so architectural rows created a matrix on which a composition was laid out. Intensifying at important moments, rhythm dictated both the organization of architectural tissue and the physiological reactions of the viewer. In so doing, it enabled orientation, which the Rationalists interpreted as an understanding of hierarchical relationships within the city. In his lecture at the "Space" course at VKhUTEIN, a member of ASNOVA, Ivan Lamtsov, pointed to the parallel between music and architecture as the two arts that brought chaos into harmony:

> As in music, the chaos of spatial forms in architecture is an absence of coordination in the joint influence of a visual sensation, which leads to an impediment of the possibility of orientation in all systems of irritations and in beholding each of them separately. Visual sensations of forms located without an order interrupt each other equally chaotically

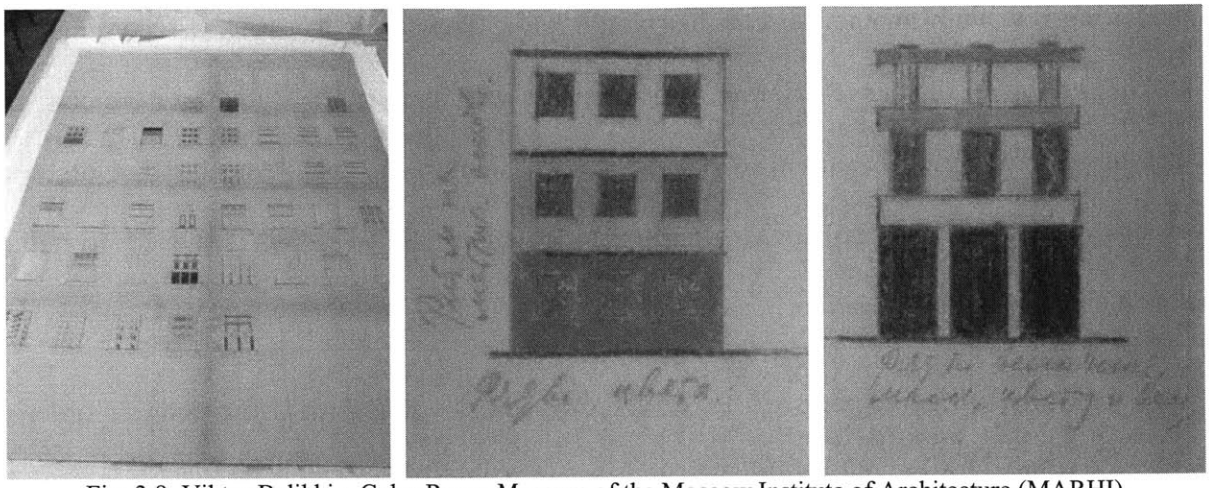


Fig. 3.9. Viktor Balikhin, Color Rows. Museum of the Moscow Institute of Architecture (MARHI).

> (without any sequence or in a completely random sequence), thereby impeding an analysis [*razbor*] of the material received by a visual organ.[345]

Applied to urban facades, color rows helped save the energy of city dwellers by preventing color fatigue, which could be provoked by too monotonous and dull as well as by excessively contrasting colors, which contributed to the nervous overstimulation of a metropolis.[346] A gradual modulation of color eliminated monotony while allowing the eye to adjust to color transitions. In the words of Lamtsov, "In regards to rows of differently arranged identical forms, one can speak of a calmer or less irritable movement, and vice versa: when perception requires constant exertion, it leads to a faster appearance of fatigue if there is no other

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[345] Ivan Lamtsov, "K voprosu o tonal'nosti v arkhitekture" ["To the question of tonality in architecture"]. Unpublished manuscript. Museum of the Moscow Institute of Architecture. Ivan Lamtsov Collection. Translation by the author. Russian original: «По аналогии с музыкой—хаос пространственных форм в архитектуре есть отсутствие согласованности в совместном действии на зрительное ощущение, вследствие чего затрудняется возможность ориентироваться во всех системах раздражений и созерцать каждую из них в отдельности. Зрительное раздражение от форм расположенных в беспорядке так же беспорядочно перебивают друг друга (вне всякой последовательности или последовательности чисто случайно) и этим затрудняют «разбор» в поступающем материале для органа зрения».

[346] Erich Borchert, "O planovoi okraske Moskvy" ["On a planned [re-]painting of Moscow"], *Maliarnoe Delo* [*Wallpainting*] No. 1 (1932): 8-13.

neighboring row with another accent that would have allowed for a rest."[347] Accordingly, in Antokol'skii's plan for the re-painting of Moscow as well as in other Maliarstroi projects, the transitions were carefully arranged by zones of similar or complementary colors that corresponded to the psychological afterimage of color and was thus believed to aid a physiologically smooth transition.

Similarly to the members of ASNOVA, Antokol'skii suggested using color in order to create a rhythm—a pace and direction of movement within the city. All the three versions of Antokol'skii's project prompted the visitor to move towards the center, thereby asserting its superior ideological and social significance. Even more so than in the two others, in the belt version, the colors' dynamogenic strength increased from the depressing blues of the periphery towards the vibrant red center. As the visitors were approaching the Kremlin, their heartbeat and breath would be intensified, their attention would be captivated by the brightness of architectural color, and their memories of everyday life would recede, being replaced with the new excitement. Having lost their former individual identity, the visitors would associate themselves instead with the country and political order through whose heart they were moving. The rhythmical movement, the pace of which was dictated by modulations of color, focused attention on a central focal point and contributed to the effect of trance and suggestibility created by Antokol'skii's environment.

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[347] Lamtsov, "K voprosu o tonal'nosti v arkhitekture." Translation by the author. Russian original: "При рассматривании рядов одинаковых форм, но с различной частотой в их расстановке—можно говорить о более спокойном движении и менее раздражительном, и наоборот, когда при рассматривании требуется беспрерывное напряжение, отчего быстрее появляется усталость, если нет еще по соседству другого ряда с другим акцентом на котором можно было бы отдохнуть."

These rows, structured by tone, lightness, and saturation, established a sequence that fixed teh relationships among objects and dictated the direction of the gaze. As common psychological knowledge had it, the gaze naturally followed a trajectory from the less to the more saturated and from achromatic towards chromatic colors.[348] Thus, just as was prescribed by the German proponents of color coding, Antokol'skii aspired to overcome the chaos of spatial perceptions and reveal the hidden logics and meaning of urban structure, making it logical and navigable by controlling the direction of the gaze and movement. His projects, like those of Burchartz and Meyer, classified color as the material and aimed to allow one to understand and navigate within it. But while *Signaletik* only coded the function of architectural environment, leaving the choice of direction to the discretion of the subject, color rows both classified the function and prescribed the visitor's route by assigning each part of the city a certain ideological importance, thus establishing a hierarchy of those parts.

ASNOVA suggested approaching the task of the re-painting of Moscow by choosing one street as a site of experiment which, if successful, could later be replicated throughout the city. This street had to be long and complete, leading from one square to another. It had to be one of the busiest streets of the city in order for the subsequent discussion to attract as many opinions as possible. Furthermore, the street had to possess a full variety of buildings: contemporary and historic, important and ordinary, as well as houses that could not be painted due to revetment. The suggestion was heard and in 1931 not one but five central streets were chosen as the sites for the wallpainting experiment, each assigned to an artist: Arbat to brothers Sternberg, Tverskaia to Luk'ianov, Petrovka to Levin, and Kuznetskii Most and Dzerzhinskii street to El Lissitzky. The

[348] S. S. Alekseev, B. M. Teplov, I. A. Shevarev, *Tsvet v arkhitekture* [*Color in Architecture*] (Moskva-Leningrad: ONTI-Gosstroiizat, 1934) 77.

final program was a compromise between the desire of the bureaucrats to give the city a grey tone (a position, against which most of the artists protested), and the colorful proposals of Antokol'skii. The Stenbergs suggested turning the grayness of the scheme into an opportunity to work with light and shade, giving the facades various tones of grey and emphasizing window-frames and doors with black coloration.[349] The grey streets were to differ in its shades (Arbat, for instance, was to be painted in blue-grey), and each would move from a lighter color on one side to a darker on the other. Intersections were to be emphasized chromatically albeit not with very bright colors, but with light-green or light-brown. To facilitate the orientation, the streets also had to be stripped of old signboards and given new ("of the type used in Berlin") directional signs. Although this program was initiated, as the other Maliarstroi initiatives were, it never went beyond the initial experimental stage.[350]

Like Ginzburg's use of color as a spatial modulator, Antokol'skii's use of color as a modulator of movement illustrated the two architectural functions of color within the formalist aesthetic system. By creating an improved—lighter, wider and higher—environment or by making certain areas of the city seem more solemn, festive, and important, both Ginzburg and Antokol'skii created psychological space by manipulating physiological sensations. Elaborated in detail in ASNOVA's theory of color rows, this program was soon proclaimed outdated and regressive by Scheper and Borchert, who brought to Maliarstroi a Bauhaus enthusiasm in regards to technology and an indifference to a psychological notion of space.

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[349] E. Zagorskaia, "Khudozhestvennoe oformlenie Moskvy," Za proletarskoe iskusstvo, 1931, No.8, 31.

[350] "Ulitsy-udarnitsy" ["Streets-Shock-Workers"], *Brigada Khudozhnikov* [*The Brigade of Artists*] No. 4 1931, Supplement "Izo-Gazeta" ["Art Newspaper"].

After his arrival in the USSR, Borchert expressed a negative opinion of Antokol'skii's plan as well as of its realization in the experimental streets. Both the dull grey actually applied on the streets of Moscow and the chromatic colors of Antokol'skii's plan were, according to him, too abstract and too intellectual: they did not consider the real, lived life of the city, which the multiformity and heterogeneity of the buildings and their colors had to reflect. However, an acknowledgment of diversity, for Borchert, did not contradict mapping a certain architectural typology, which, without endangering its complexity, organized a chaotic Simmelian metropolis into a rationalized system.

> What does one have to start from when designing the color scheme of a city? First of all, from the heterogeneity of the architectural elements of such a city as Moscow, where administrative centers, new architecture, old architecture (in which one has to distinguish historically valuable buildings and buildings, which do not have any historic or artistic value) coexist. There are empty squares, rivers, department stores, and, not least, the so-called "small architectural forms" [*malaia arkhitektura*]—newspaper kiosks and so on; adding to the picture are the objects of transportation and movement and signalling systems and equipment connected to them, and, finally, cinematic billboards and other neon advertisement, posters, and so on.[351]

If for Antokol'skii energy could be saved by helping the visitor to orient herself through giving façades arbitrarily ascribed colors that conformed only to the general color scheme of the city and informed only the location of the building—Borchert believed that energy was produced by the city as a place of past and present social encounters, and should be equally distributed among its parts rather than confined to one quasi-religious ideological center. Rather than

[351] Erich Borchert, "O planovoi okraske Moskvy," 12. Translation by the author. Russian original: «Из чего же нужно исходить при проектировании красочного оформления города? Прежде всего из учета многообразия архитектурных элементов такого города, как Москва, где налицо имеются административные центры, новая архитектура, старая архитектура, причем в последней нужно различать здания, ценные в историческом отношении, и здания, не имеющие никакой ни исторической, ни художественной ценности. Имеются свободные площади, реки, универмаги, и не на последнем плане так называемая «малая архитектура»--газетные киоски и т.п.; для дополнения картины—предметы транспорта и передвижения, и связанные с ними разнообразная сигнализация и оборудование, наконец кинореклама и другие «светящиеся» рекламы, плакаты и т.п.».

prescribing the route for the subject, Borchert's suggestion asserted a free-will subjectivity, which, aided by the color of the streets, organized and classified the city. While Antokol'skii reassigned this organizational work to the architect in order to economize the subject's energy that would otherwise be spent on this analytical operation. Nevertheless, substituting individuality with social and historic typology, Borchert stopped short of sanctioning Antokol'skii's authoritarianism, which had only drawn the energy-saving imperative to its all too logical conclusion.

Standardization

In 1927-1929, Malevich's former students Nikolai Suetin and Il'ia Chashnik worked in the Committee of Artistic Industry headed by Constructivist architect Aleksandr Nikol'skii.[352] "Nikol'skii is very attentive and is constantly asking for advice; it is evident that he would be pleased to have us as his assistants," commented Chashnik in a letter to his friend, "but so far he cannot hope for this, because the time has not come—and, I believe, never will come—for Constructivist architects to reign over painters."[353] In 1927, Chashnik reported with satisfaction a

[352] The committee function within the the State Institute of the History of Fine Arts [Gosudarstvennyi institut istorii iskusstv]. Chashnik and Suetin both studied under Malevich in Vitebsk UNOVIS, where they participated in Malevich's program of painting suprematist compositions on the street facades of houses as a revolutionary propaganda.

[353] A letter from Chashnik to Ts. Iu. Gorodneva, 19 August 1927. *Malevich o sebe. Sovremenniki o Maleviche.* [*Malevich on Himself. Contemporaries on Malevich*], ed. I. A. Vakar, T. N. Mikhienko, in 2 vols. Vol. 2 (Moskva: RA, 2004) 317. Quoted after Selim O. Khan-Magomedov, *Aleksandr Nikol'skii*. Moskva: Russkii Avangard, 2009, 50. Translation by the author. Russian original: «Никольский очень внимателен и на каждом шагу спрашивает советов, по всему видно, что он счет бы для себя приятным положением, если бы мы согласились стать его ассистентами, но пока на это ему не приходится рассчитывать, ибо еще не наступило время архитекторов-конструктивистов царить над художниками, и я думаю, что и не наступит, а пока пускай себя обнадеживает...».

recently completed project ahd been well received by Stroikom, an organization created for the development of standardized plans for residential construction on a mass scale, where he and Suetin aspired to obtain a position. Happy that Stroikom, "into which, as it seems, we will [now] be able to infiltrate [*vlezt'*]," had a favorable opinion of their work, Chashnik immediately explained that his interest in the organization was purely careerist, and that Stroikom was "of course, no authority for us, and therefore we are waiting for Kazimir Severinovich [Malevich] who most likely will be critical."[354] Malevich, however, was not critical: he himself tried to "infiltrate" Stroikom in 1927, when he offered to organize a laboratory for the research of color and form there.[355] Evidently wishing to attract the attention of Stroikom to his potential as a wallpainter, around the same time Malevich submitted an article on color to *Sovremennaia Arkhitektura*, whose editor, Ginzburg, was Stroikom's leading member. Moreover, Malevich offered to collaborate with the same Nikol'skii (the leader of Leningrad Constructivists and Ginzburg's close colleague) in whose department Suetin and Chashnik worked. When both these efforts fell through, around 1930, Malevich unsuccessfully went on to solicit a position in Maliarstroi. Finally, as the last attempt to save Suprematism through wallpainting, in 1931, without an official connection to an architecture organization, Malevich prepared dozens of watercolor sketches illustrating his color scheme for the interior of the Red Theater in Leningrad.[356]

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[354] A letter from Chashnik to Ts. Iu. Gorodneva, 28 August 1927. *Malevich o sebe. Sovremenniki o Maleviche*, vol.2, 316-317. Quoted after Khan-Magomedov, *Aleksandr Nikol'skii*, 51-52. Russian original: «Это, конечно, для нас не авторитет, и потому мы ждем Казимира Севериновича, который, наверное, будет нас ругать».

[355] A letter from Malevich to Suetin, August 1927. *Malevich o sebe. Sovremenniki o Maleviche*, vol.1, 194. See also Khan-Magomedov, *Aleksandr Nikol'skii*, 51.

[356] In August of 1931, the Red Theater received 87 sketches, which illustrated the schemes of wallpainting for the auditorium, the lobby, the staircase and the cupola. The wallpainting works were finished by 1932. Malevich's

Malevich's repeated efforts either personally or through his students to "infiltrate" Stroikom in the late 1920s reflected his understanding of the crisis of individual and individualistic art. Malevich's idealism, mysticism and perhaps personal megalomania precluded him from succeeding in establishing collaboration with Stroikom. However, a Suprematist conviction in an absolute supremacy of painting over architecture was only part of what caused the painter, in spite of his fame and reputation, to be rejected repeatedly by architects. More important was his insistence on the existence of an impassable abyss separating the two arts, and on his interpretation of painting, in a contrast to architecture, as an inspirational and a-rational process.[357]

Rather than following Malevich, Soviet wallpainting, developed under the auspices of Stroikom, was elaborated by another group of people, who espoused more materialistic, positivist, and pragmatic attitudes—attitudes that gestated within the Dessau Bauhaus. The head of the Bauhaus Wallpainting workshop, Hinnerk Scheper, was invited to the USSR to introduce the pioneering German approach to the discipline. During the academic year 1930/1931, he succeeded in obtaining a teaching position at Moscow VKhUTEIN, where color was still interpreted as a means of painterly expression.[358] Such an approach seemed unbelievably

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interiors, however, were destroyed in a later fire. See: L. A. (Larisa) Zhadova, "Iz istorii sovetskoi polikhromii" ["From the history of Soviet polychromy], *Tekhnicheskaia estetika* [*Technical aesthetics*] No.7 (1975): 3-5.

[357] In his article "Form, Color, and Perception" published by *Sovremennaia arkhitektura*, Malevich wrote: "Thus, all the laws established by optics and grounded in the physical perception of phenomena by the eye system, can, of course, be introduced into the knowledge of a painter, but he will not have a chance to use them in his creative work; this knowledge will be abstract for him. But if a painter decides to use it, one can be certain that his works will resemble artistically worthless paintings of the great scientist of color Ostwald." Kazimir Malevich, "Forma, Tsvet i Oshchushchenie" ["Form, Color, and Perception"], *Sovremennaia arkhitektura* [*Contemporary Architecture*] No.5 (1928): 157-159 (157).

[358] Renate Scheper, *Vom Bauhaus geprägt: Hinnerk Scheper: Farbgestalter, Fotograph, DenkmalpfLéger* (Bramsche: Rasch, 2007) 93.

backward and traditionalist to Scheper, who in an open letter to VKhUTEIN students, which was published in German-language Moscow newspaper *Moskauer Rundschau* in early 1930, accused them in sticking to old, doomed forms of artistic production. The majolica inscription with the name of the institute, placed above the entrance to VKhUTEIN, was for Scheper not a coincidence but rather an exemple of the backwardness of the place, in which students and teachers still could not rid themselves of the notion of art as an individual, craft production. Modern times, however, required a new art that was practical, rational, and technological.

> ...**New necessities will create the new art.** Your simple, direct connection with facts, with the direct tasks of the day, is the natural soil for a new design of form [*Formgestaltung*]. Of course, there are also good paintings, painters who search for form, and artists who independently pose problems among you. However, at this moment it is not essential if you paint somewhat better or worse, but it is essential if painting can at all remain your central school and life task.
>
> Because this is what your construction needs: architects, wallpainters, furniture designers, weavers, that is, constructors, material workers, designers of form, makers of objects [*Gegenständler*], the virtuosos of form [*Formspieler*], but virtuosos of function-related forms. You should not acknowledge your art as the root of your creative work, confusing your outdated forms of expression (educational principles found for outdated people), that is, a part of a concept, with the whole concept. Above all, you should not cultivate a dualism of work: here free, there applied art (that is, arts and crafts once again instead of a technical form!). You cannot paint academic nudes and construct **the** chair for **the** house, for **the** mass at the same time. You cannot allow your formal education, which you consider to be the foundation of your education in new painting, to be impacted by old traditional principles, while you think on the satisfaction of new, nontraditional demands. Your formal education must be organized according to new methods that familiarize you with the elements of your work: materials, functions, the laws of color.[359]

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[359] H. und L. Scheper, „Offener Brief an die Schüler des „WCHUTEIN"." "Moskauer Rundschau, 1930 (2. Jg.), No 4, 30.1.1930. Scheper's emphases. Translation by the author. German original: „...**Neue Notwendigkeiten werden eine neue Kunst schaffen**. Eure einfache, direkte Verbundenheit mit den Tatsachen, den direkten Aufgaben des Tages, ist der natürliche Nährboden für neue Formgestaltung. Sicherlich: es gibt auch gute Bilder, formsuchende Maler, sich selbst Probleme stellende Künstler unter Euch. Aber es kommt im Moment nicht darauf an, ob Ihr etwas besser oder schlechter malt, sondern es kommt darauf an, ob überhaupt Bildmalerei für Euch zentrale Schul- und Lebensaufgabe sein kann.
Denn, was braucht Euer Aufbau: Architekten, Wandmaler, Möbelbauer, Weber, also Konstrukteure, Materialarbeiter, Formgestalter, Gegenständler, Formspieler, aber Spieler mit funktionsbedingten Formen. Ihr solltet nicht, da Ihr Kunst als Wurzel Eures Schaffens anerkennt, eine ihre verflossenen Ausdrucksformen

Scheper's intolerance of crafts and individual art is reminiscent of the battles that had only recently broke out at the Bauhaus. Between 1919 and 1928, the initial interest in anthroposophy and idealism characteristic of the thinking of Itten and Kandinsky was replaced at the Bauhaus with attempts at inscribing art and architecture into the system of modern technology. Though the first motto of the Bauhaus, developed by Gropius in 1919, read "Kunst und Handwerk – eine neue Einheit" ("Art and Craft: a New Unity"), in 1923 Gropius rejected craftsmanship and individual handwork in favor of modern, technologized production, and changed the motto to "Kunst und Technik – Eine Neue Einheit" ("Art and Technology: a New Unity"). Similarly, the Workshop of Decorative Painting [*die Werkstatt für Dekorationsmalerei*], which existed at the Bauhaus since its establishment in 1919 in Weimar, was by 1921 renamed into *die Werkstatt für Wandmalerei*, the Workshop of Wallpainting.[360] Finally, art followed the fate of craft when in 1928 Meyer redesigned the educational program of the Bauhaus—technology alone was to reign the curriculum from then on. Architecture became the priority of

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(Erziehungsprinzipien, für verflossene Menschen gefunden) also einen Teilbegriff mit ihrem ganzen Begriff verwechseln. Ihr solltet vor allem nicht einen Dualismus der Arbeit heranzüchten: hier freie, hier angewandte Kunst (also doch wieder Kunstgewerbe, statt technischer Form!) Ihr könnt nicht gleichzeitig akademische Akte malen und **den** Stuhl für **das** Haus, für **die** Masse konstruieren. Ihr könnt nicht Eure formale Ausbildung, die Ihr für die Grundlage Eurer Erziehung zu neuen Bildnern haltet, von alten gewohnten Prinzipien beeinflussen lassen, während Ihr an die Befriedigung neuer, ungewohnter Forderungen denkt. Eure formale Ausbildung muss nach neuen Methoden gehandhabt werden, die Euch die Elemente Eurer Arbeit: Materialen, Funktionen, Farbgesetze, Formgesetze geläufig machen."
Nevertheless, during his stay in the USSR, Scheper seemed to have acquired interest in visual perception, and after the return to the Bauhaus restructured the work of the workshop according to his Moscow experience. Now, his class on the "theory of color," resembling classes taught by psychologists at VKhUTEIN, included a study of the emotional and sentimental value of color in the works of scientists from Newton to Goethe and experiments with afterimages (successive and simultaneous contrast). Scheper, *Vom Bauhaus geprägt*, 37, 42.

[360] *Die Werkstatt für Dekorationsmalerei* was among the first Bauhaus workshops, opened by Henry van de Velde. On the history of the workshop, see Renate Scheper, "The History of Wall-Painting Workshop at the Bauhaus," *Farbenfroh! Colourful! Die Werkstatt f[r Wandmalerei am Bauhaus. The Wallpainting Workshop at the Bauhaus* (Berlin: Bauhaus-Archiv, 2005) 6-41.

the school, being understood not as one of the fine arts, but simply as "building," that is as, "organization: social, technical, economic and physical organization."[361]

Meyer's arrival did not initiate but rather solidified the shift in attitude toward technology at the Bauhaus: Scheper, for one, cherished the beliefs he expressed in *Moskauer Rundschau* already in the mid-1920s. When he became the director of the Wallpainting Workshop in 1925, he reoriented its approach from painterly to the scientific, restructuring the workshop as a site of experiments in the science and technology of wallpainting. In June 1927, Wilhelm Ostwald gave a talk on his color theory at the Bauhaus. At the same time Scheper and his students studied the chemical properties of dyes, techniques of mixing and application, and different spraying machines. Working in collaboration with the *Reichsforschungsgesellschaft für Wirtschaftlichkeit im Bau- und Wohnungswesen* (the National Research Association for Efficiency in Construction and Housing), the Wallpainting workshop experimented with new paints (distemper, casein paint, turpentine paint, lithogen, mineral-based paints, and enamels) and manual and mechanized methods of their application.[362] By the late 1920s, the Workshop had three areas of concentration: poster painting, interior color schemes, and the practical application of new techniques developed in experimental workshops.[363] When in 1927 the joinery, metalwork and wallpainting workshops were united into a department of Interior Design [*Innenausbau*], the

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[361] Hannes Meyer, "Bauen," *Bauhaus*, No. 2 (1928): 12-13. English translation as "Building" by D.Q. Stephenson from *Hannes Meyer: Bauten, Projekte Und Schriften: Buildings, Projects, and Writings*, ed. Claude Schnaidt (Teufen, Schweiz: A. Niggli, 1965).

[362] The researchers found out that "75% of labor costs and 30% of the costs of materials could be saved when painting radiators" and "25% of labor costs and 30% of the costs on materials could be saved by painting walls and ceilings with spray guns, provided the areas are large enough and the same color is used." Scheper, *Vom Bauhaus geprägt*, 148 (Footnote 11). See also Scheper, *Vom Bauhaus geprägt,* 24-25.

[363] Scheper, *Vom Bauhaus geprägt,* 31-32.

Wallpainting workshop focused on the latter two areas, developing color schemes for internal spaces and experimental testing of various grounds, dies, and techniques, toning pure colors with black and white, as well as psychological research on the mutual influence of colors.[364] Scheper, who was replaced by Hans Arndt during his stay in Moscow, resumed teaching the course on color after his return from the Soviet Union, in the winter semester of 1931-1932, and even received a "an excellent color laboratory" that was not connected to production but was exclusively "teaching and experimental" venue.[365]

Scheper's experimentation concentrated on the physical properties of dyes, although he also paid some attention to the psychology of perception. In 1925 at the university hospital in Münster Scheper painted the operating room into an off-white hue in order to avoid blinding the surgeon, and gave the X-Ray room a dark-red color, which facilitated an adaptation of the eye to darkness once the light was turned off.[366] Scheper's student Erich Borchert demonstrated a much stronger interest in applying the physiology of color perception to architecture. Signed by Hannes Meyer on 28 January 1930, Borchert's graduation certificate praised the successful results of his "experiments in all spheres of research of paint and light on the basis of the psychology of their perception."[367] Indeed while studying at the Bauhaus Borchert conducted his own psychological research in a Berlin psychiatric hospital: as was believed at the time, mentally ill people, particularly those suffering from nervous diseases ("neurotics" and "hysterical

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[364] Scheper, *Vom Bauhaus geprägt,* 39.

[365] Scheper, *Vom Bauhaus geprägt*, 41.

[366] Scheper, *Vom Bauhaus geprägt,* 22-23.

[367] Astrid Volpert, "Bez vozmozhnosti vozvrata" [„Without an opportunity to return"], *Erich Borchert v Rossii [Erich Borchert in Russia]* (Moskva: Izdatel'stvo im. Sabashnikovykh, 2008) 8-11 (11).

women"), possessed a more receptive sensory system and thus presented a purer material for psychological research. Moreover, external irritants such as color affected them more easily and deepely than other people, and color therapy [German *Farbtherapie*; Russian *tsvetoterapia*] was considered especially effective in the treatment of nervous disorders. Based on the outcomes of his research, Borchert suggested that in hospitals grey hues, which provoked depression, be replaced with light chromatic colors (light ochre, marble-pink, yellow or yellowish-green); the walls of patient rooms in most of the departments should to be painted in calm tones (though not white, which white was too bright, nor blue, which was a depressant). Only in the neuropathological department, was color (usually bright red) used therapeutically—there, its dose was to be regulated by a system of special screens.[368]

The results of Borchert's medical research were published in Moscow. It was there, under the umbrella of Maliarstroi, on the basis of several psychological and social theories, that the two German expatriates, Scheper and Borchert, together with Soviet colleagues developed a concept of subjectivity that they then hoped to see replicated throughout the country. Maliarstroi, or the State Trust for Wallpainting Works [*Gosudarstvennyi trest po proizvodstvu maliarnykh rabot*] under the Supreme Council of the People's Economy of the USSR, was formed in October of 1928 in order to execute "wallpainting works using contemporary technical achievements"[369] and was led by a Party official Efim Stokolov.[370] The trust's ambitions extended to the design of

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[368] Borchert, "Okraska bol'nits i sanatorii" ["Wallpainting of hospitals and sanatoria"], *Maliarnoe Delo* [*Wallpainting*], No. 4 1931: 25-27 (25).

[369] Statutes of Maliarstroi. Approved by the Supreme Council of People's Economy of the USSR October 9 1928. Published in Igor A. Kazus', *Sovetskaja architektura 1920-kh godov: Organizatsia proektirovaniia* [*Soviet Architecture of the 1920s: Organization of Design*] (Moskva: Progress-Traditsia, 2009) 244.

[370] Efim Evdeevich Stokolov (1890-1974), was a Party bureaucrat, a member of the Communist Party since 1917.

"all sorts of wallpainting works, the interior and exterior design of residential, industrial, office, cultural and farm construction, color design of clubs, theaters, palaces of labor and culture, city architectural complexes, streets and squares."[371] Wallpainting was introduced by Stokolov as a progressive Western technology, necessary for the optimization of social and work processes within a building. Explaining the goals and methods of the new organization, Stokolov firmly inscribed wallpainting into the context of the USSR's striving for a modernized economy:

> Wallpainting as such has previously presented a branch of building [industry] that was not considered beyond inviting one or another contractor.
>
> This circumstance fully underscored our backwardness [in relationship to] the contemporary achievements of Europe and America, where wallpainting is subjected to study, improvement and rationalization alongside the other processes of building.
>
> Put into the context of scientific research, studied from all points of view, wallpainting abroad is no longer primitive but is, as any other branch of building, subjected to the processes of projection in economic calculation and of scientific substantiation in the application of necessary combinations of colors.
>
> It is therefore natural that in our effort to "catch up and overtake"[372] we cannot leave in a primitive state this important part of construction.[373]

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[371] E[fim] Stokolov, "Ot redaktsii" ["From the editors"], *Maliarnoe Delo* [*Wallpainting*] No.1-2 1930: 1-2; Kazus', *Sovetskaja architektura 1920-kh godov*, 244.

[372] The phrase "to catch up and overtake" (Western countries) was a popular quotation from Lenin's "Groziashchaia katastrofa i kak s nei borot'sia" ["Imminent catastrophe and how to struggle with it"] (September 1917).

[373] Stokolov, "Ot redaktsii," 1. Translation by the author. Russian original: «Малярное дело, как таковое, до этого момента являло собой отрасль строительства, внимание к которой не распространялось далее приглашения того или иного подрядчика для выполнения малярных работ.
Это обстоятельство как нельзя более подчеркивало нашу отсталость от современных достижений Европы и Америки, где малярное дело подвергается изучению, усовершенствованию и рационализации наравне с другими процессами строительства.
Поставленное в рамки научных исследований, изучаемое во всех разрезах, малярное дело за границей не является больше кустарным, но, как и всякая другая отрасль строительства, подчиняется уже элементам проектирования экономического расчета и научного обоснования в применении необходимых сочетаний цветов.
Поэтому естественно, что в нашем стремлении «догнать и перегнать» мы не можем оставить в кустарном состоянии этот важный участок строительства».

Maliarstroi belonged to a group of institutions created in the late 1920s for the purpose of rapidly modernizing the USSR through the import of Western technology. The slogan of modernization, "to catch up and overtake," which had been on the banner of the Bolshevik Party since its very first days, acquired a new meaning and significance after the announcement of the First Five-Year Plan in 1928. The centralized and planned economy based on large heavy-industry enterprises, which the Five-Year Plan intended to bring to life, required modern technological production in all spheres. In order to achieve the technological breakthrough, the government created a vast and diverse chain of research centers and offices, which collaborated and sometimes conflicted with each other. Maliarstroi, for instance, was paired with *Vsekhimprom* (*Vsesoiuznoe ob'edinenie khimicheskoi promyshlennosti*, All-Union Association of Chemical Industry), which united variuos enterprises from chemical industry; and their shared periodical, *Maliarnoe Delo* [Wallpainting], in fact served both organizations.[374] Indeed, some architects associated wallpainting exclusively with the invention and application of chemical dyes.[375] Others had a broader view of the technology that Maliarstroi was to further, a vision that included psychological, town-planning and even artistic questions.[376] The trust was in fact conceived as an analog to the *Bund zur Förderung der Farbe im Stadtbild* [The Union for Furthering Color in the City Landscape] that had existed in Hamburg since 1926 and published a

[374] Vsekhimprom, or *Vsesoiuznoe ob'edinenie khimicheskoi promyshlennosti* (All-Union Association of Chemical Industry), existed under the Supreme Council of People's Economy of the USSR in 1929-1931.

[375] See, for instance, A[leksei] V. Shchusev, "Stroitel'stvo novykh gorodov i massovaia okraska zdanii" ["Building of new cities and mass painting of buildings"], *Maliarnoe Delo* [*Wallpainting*] No.1-2 (1930): 8-9.

[376] See, for instance, Igor Grabar', "Soiuz iskusstva i remesla" ["A union of art and craft"], *Maliarnoe Delo* [*Wallpainting*] No.1-2 (1930): 8.

monthly journal *Die Farbige Stadt.*[377] The Hamburg union, which included artists, town planners, bureaucrats, architects, and chemists[378] aimed at coordinating the related subjects of art, town-planning, the craft and technology of wallpainting, and the psychology of color perception,[379] and declared a synthesis of art and science to be its goal: "It has to become the task of a separate technical craft, which is entrusted with the basic chemical principles of pigments and binding agents, to build a bridge between science, which produces new research findings, and the possibility of their implementation, the proof of which is, on the other hand, the task of a painter."[380]

Radically distinguishing it from its German model, however, was the fact that Maliarstroi was created to support an unprecedented project for the standardization of construction. This was due to the unique social system that was being created in the USSR. The logics of the Five-Year

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[377] *Die Farbige Stadt, eine Monatsschrift hrsg. vom Bund zur Förderung der Farbe im Stadtbild* (Hamburg, 1926-1937). The organization was mentioned during the discussion on the repainting of Moscow. Among other publications that served as models for *Maliarnoe Delo* were: *Farbenzeitung* (Berlin: 1903/04 – 1943); *Farbe und Lack: Organ der Fachgruppe "Lackchemie" der Gesellschaft Deutscher Chemiker, der Schweizerischen Vereinigung der Lack- und Farbenchemiker (SVLFC), des Verbandes der Ingenieure des Lack- und Farbenfaches (VILF)* (Hannover, 1893 – 1947); *Form und Farbe : Fachblatt für das Malerhandwerk / Reichsinnungsverband des Malerhandwerks / Fachblatt für Maler: Fachzeitschrift für Berufsausbildung, Berufserziehung und Schulung im Malerhandwerk* (Berlin, 1925-1943); *Die Farbe : Sammelschrift für alle Zweige der Farbkunde* (Leipzig:1921-1926).

[378] Among the members of the Union were architects Ernst May and Paul Schultze-Naumburg; director of the Zurich Museum of Arts and Crafts Alfred Altherr, head of the Chemical Research Office of the German Union of Wallpainting Dr. Amsel (Kiel); professor at the Technical Institute of Hannover Friedrich Fischer; director of Munich School of Crafts Prof. Otto Rückert, and many others.

[379] See „Aus dem Arbeitsbereich des Bundes zur Förderung der Farbe im Stadtbild e. V. Sitz Hamburg," *Die Farbige Stadt, eine Monatsschrift hrsg. vom Bund zur Förderung der Farbe im Stadtbild* No.2 (September1926): 30.

[380] Hans Schmid, „Technische Möglichkeiten des farbigen Hausschmuckes," *Die Farbige Stadt* No. 1 (1926): 5-9 (6). Translation by the author. German original: „Es muß Aufgabe einzelner technischer Kräfte sein, die ebenfalls mit den chemischen Grundprinzipien in bezug auf Farbe und Bindemittel vertraut sind, eine Brücke zu schlagen zwischen der Wissenschaft, die neue Forschungsergebnisse hervorbringt, und der Ausführungsmöglichkeit, welche wiederum zu prüfen Sache des Malers ist."

Plan dictated an elimination of private and small businesses from all spheres of the economy and replaced them with large enterprises that could easily be subjected to state planning and regulation. This standardization allowed for the rationalization of plans and projects, and for the full control by the state of the domain of architecture. Accordingly, Maliarstroi was designed to create standardized schemes for interior decoration, which could be replicated throughout the country, excluding any risk of a spontaneous initiative from below.

On the pages of *Maliarnoe Delo,* V. Sestroretskii (who quickly replaced Stokolov as the head of the trust) and N. Nishenko presented the task of the newly created organization as a battle against the individual handicraftsman [*kustar'*], whose existence endangered the morale of the workers and thus the success of Soviet power itself: "...The question of the [interior] design of homes, civil and industrial buildings etc. cannot be excluded from the front of the cultural revolution, cannot be left in the hands of an unorganized initiative—the product of pre-Revolutionary bourgeois tastes and needs."[381] Here the German experience in industrial design was indispensable, and it was this experience that Scheper was to bring to Moscow. Describing his approach to wall-painting in 1935, Scheper's colleague Boris Ender wrote: "my work on the art of wallpainting possesses two particular qualities: on one hand, I ground my work on color scientifically (something that even the Germans, for instance Scheper, do not do); on the other

[381] V. Sestroretskii and N. Nishenko, "Puti pazvitiia maliarnogo dela v SSSR," *Maliarnoe delo* [*Wallpainting*] No.1-2 1930: 2-4 (2). Translation by the author. Russian original: «Между тем вопрос оформления жилища, общественных зданий, промышленных построек и пр. нельзя выключать из фронта культурной революции, нельзя оставить в руках неорганизованной инициативы—продукта дореволюционных буржуазных вкусов и потребностей».

hand, I put the gradations of color (color tones) directly into production (this I have learned from Scheper)."[382]

Maliarstroi worked in a close collaboration with another newly created organization, responsible for furthering standardized building types and techniques in the USSR. This organization was Stroikom, which Malevich unsuccessfully tried to "infiltrate." Stroikom, or the Construction Commission of the Economic Council of Russian Soviet Federative Socialist Republic (RSFSR), was created in January 1928 with the purpose of "general regulation and rationalization of construction in the territory of the RSFSR." It was expected, among other things, to propose legal regulation for construction in the republic, develop standardized types of buildings for the purposes of various organizations, to create and administer general rules of design, and to make calculations for construction works. Moisei Ginzburg became the head of the Section of Typification [*Sektsia Tipizatsii*], responsible for developing building types, including their construction methods and standards, for experimental construction, and for the training of technical staff.[383] There he collaborated with El Lissitzky and former Constructivist students Mikhail Barshch and Vladimir Vladimirov, among others.[384]

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[382] Larisa Zhadova, B. V. Ender o tsvete i tsvetovoi srede," *Tekhnicheskaia Estetika* [*Technical Aesthetics*] No.11 (1974): 5-8 (6). Translation by the author. Russian original: «В моей работе по мастерской колеров две особенности: с одной стороны, научно обосновываю свою работу над цветом (чего не делают даже немцы, пример—Шепер); с другой стороны, я даю в производство колера из своих рук (этому Шепер научил)». For a German translation see Larisa Shadowa, „Hinnerk Scheper und Boris Ender im Maljarstroj. Über Verbindungen von Mitarbeitern des Bauhauses und sowijetischen Künstlern," *Wissentschaftliche Zeitschrift der Hochschule für Architektur und Bauwesen Weimar* No. 4/5 (1979): 323-327 (325).

[383] Kazus', *Sovetskaja architektura 1920-kh godov*, 293.

[384] *Tipovye proekty i konstruktsii zhilishchnogo stroitel'stva, rekomenduemye na 1930 g.* [*Standardized projects and construction solutions of residential building recommended for the year 1930*], ed. Vladimir I. Vel'man (Moskva: Gos. tekhn. izd-vo, 1930) 7.

There was just one way to overcome "our outstanding technical backwardness,"[385] and "catch up and overtake" the West—to learn from Western technologies. This was, however, problematic, as shortly after the Revolution of 1917 Soviet power expelled the majority of the old-regime intelligentsia as potential counter-revolutionaries and sympathizers with the bourgeoisie. However, the new, working-class intelligentsia, that the Soviets expected to emerge, did not immediately manifest, and the state had to encourage and invite the same class of people that it had recently persecuted, restoring some of the old privileges and hierarchies erased by the Revolution. As the remnants of the pre-revolutionary intelligentsia class were not enough to feed the needs of the fast-growing industry, the state initiated a vast- program of sending Soviet specialists abroad (for instance, in 1927 Ginzburg travelled to Germany, where he visited the Bauhaus) and most importantly, of inviting Western, in particular, German and American, engineers and other specialists, most of whom eagerly accepted this opportunity as the Great Depression hit their native countries. These technical specialists (the so-called "spetsy"), whether of Russian or Western origin, in spite of their alien class interests enjoyed all the privileges that the Soviet society could offer: high salaries (in foreign currency for the non-citizens), special food distribution centers, and better living conditions.[386] The Soviet power, it was maintained, would use them to teach a growing generation of working-class intelligentsia, and, independently of their private ideology, the benefit that *spetsy* brought to the state far outweighed the harm that they could cause.

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[385] V[ladimir] Vel'man, "Predislovie" ["Introduction"], *Tipovye proekty i konstruktsii,* 5-10. Russian original: «нашу чрезвычайную техническую отсталость».

[386] In spite of the badly-concealed hatred of the lower party officials and politically active workers towards *spetsy*, *spetseedstvo* (spetsy-eating) was discouraged throughout the late-1920s-early 1930s. See Sheila Fitzpatrick, "The Soft Line on Culture and Its Enemies" (1973), *The Cultural Front: Power and Culture in Revolutionary Russia* (Cornell University Press, 1992) 91-114.

In March of 1929, a special delegation of Stroikom arrived in Germany to recruit specialists for the Soviet building and construction industry. The Committee's head, engineer Boris Barskii,[387] turned for advice to the Hungarian architect Fred Forbat, who taught at the Weimar Bauhaus in 1920-1922 and who, from 1925 to 1928, acted as the head of the planning department the concern of Berlin developer Adolf Sommerfeld.[388] Forbart pointed at Scheper, who had studied at the Weimar Bauhaus from 1919 to 1922, was one of the several Bauhaus graduates who were invited by Gropius to head the newly founded Bauhaus workshops in 1925, and who had executed numerous wallpainting commissions for buildings in Germany, including the Bauhaus building itself. [389] Scheper moved to Moscow as early as July 1929 to occupy the position at Maliarstroi and remained there until 1931. "The whole initiative, which Scheper started here, seems to me so important that I sincerely cannot understand how because of 800 rubles [Scheper's Soviet salary], and only for a few months, a quarrel could have happened at all. [...] I personally observed how Scheper trained every working group, and I believe that the profit of the saved material alone significantly overweights the costs of Scheper"—so Barskii defended his hire from the attacks of Stokolov, the head of Maliarstroi, at the end of the same year,

[387] Boris Evseevich Barskii (1890-1937) was a Soviet engineer; he was subjected to repression and shot in 1937. Kazus', *Sovetskaja architektura 1920-kh godov,* 431.

[388] Alfréd (Fred) Forbát (1897-1972) was a Hungarian-born architect who worked primarily in Germany and Sweden. In 1933, Forbát moved to the USSR, where he joined "brigade" of Ernst May. See also, Scheper, *Vom Bauhaus geprägt*, 92 (footnote 2).

[389] Hinnerk is a Low German version of Heinrich, which Scheper accepted as his name. The young Bauhaus masters, called junior masters, apart from Scheper, were Herbert Bayer (Typography), Marcel Breuer (Furniture), Gunta Stölzl (Textile), and Joost Schmidt (Plastische Werkstatt—Volume).

emphasizing the purely practical benefit that the German specialist gave to the Soviet economy.[390]

Scheper became the head of the Production and Technical Sector of Maliarstroi, which housed the scientific-experimental laboratory and the Office of Design [*Proektnoe Biuro*], in which the design work was concentrated.[391] Only several of twenty seven people who worked in the Production-Technical Sector under Scheper were connected with the Office of Design. But in spite of its relatively small size, the Office undertook multiple commissions—over 300 in 1931 alone.[392] The work in Moscow, as Scheper's wife Lou (herself a Bauhaus graduate) characterized it, "provided a tremendous field for experimentation."[393] And indeed, among the projects prepared in Maliarstroi were clubs, theaters, factory dining halls, and collective farm buildings, all of which were to become prototype models for later complete or partial reproduction.[394] Moreover, in order to ensure the correct reproduction of the architectural decisions, Scheper and Ender worked on a catalog of standardized colors.[395]

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[390] Scheper, *Vom Bauhaus geprägt*, 56.

[391] Kazus', *Sovetskaja architektura 1920-kh godov,* 244.

[392] Kazus', *Sovetskaja architektura 1920-kh godov,* 244.

[393] Lou Scheper, „Retrospective," *Bauhaus and Bauhaus People. Personal Opinions and Recollections of Former Bauhaus Members and Their Contemporaries*, ed. Eckhard Neumann, transl. Eva Richter and Alba Lorman (New York: Von Nostrand Reinhold, 1993) 120-125 (125).

[394] Among the projects prepared by the Design Office were the Club of Railroad Workers at Liublino station (today within the city of Moscow) (Borchert), the Club of Factory No.12 at Elektrostal' station (near Moscow), the movie theater of the residential complex the All-Russian Central Executive Committee on Bersenevskaia Embankment in Moscow, the dining hall of the Moscow Union of Consumption Associations (Borchert), several buildings of the grain state farm on Verbliud station (near Rostov-on-Don).

[395] *Maliarnoe Delo,* No. 5-6 (1931); Kazus', *Sovetskaja architektura 1920-kh godov,* 244.

Although wallpainting was technologized and standardizied in the Office of Design, it remained within the domain of art. Already at the Dessau Bauhaus, wall-painting was the only way painting was admitted to the radically anti-subjectivist program of the school. Likewise, Maliarstroi brought science and art together in order to de-subjectivize art, to insert it within the program of economic construction, to make it valuable, useful, and available to all. The Office was staffed by people professionally trained as artists. One of the oldest members was Leiba Antokol'skii, who started working in Maliarstroi before Scheper's arrival and was the deputy editor of *Maliarnoe Delo.*[396] A graduate of the Imperial Academy of Arts in St. Petersburg, he studied decorative art in Hamburg and afterwards worked as a portraitist and monumental painter in Moscow. Another key member was Matiushin's student Ender, who worked with Nikol'skii in Leningrad, and joined Maliarstroi after he moved to Moscow in 1930. In February 1930, Scheper's Bauhaus student, Expressionist painter Erich Borchert joined Scheper as an assistant immediately after graduating from the Bauhaus. Perhaps, it was Borchert's political engagement—unlike Scheper, he was a member of the Bauhaus Communist party cell, which he joined in 1928—that made him turn his attention to the possibilities that color offered for social engineering and subsequently to move and stay in the USSR. After Scheper's return to Germany, Borchert occupied his position as the head of the Department of Design.[397] Finally in 1929 and

[396] Leiba Movshevich (Lev Moiseevich) Antokol'skii (1872-1942) came from a Lithuanian Jewish family. He grew up and received initial art education in Vil'nus, Lithuania (then a part of the Russian Empire) where he practiced and taught art with the exception of the period of his study at the Imperial Academy of Arts in St. Petersburg in 1893-1900. In 1912, Antokol'skii studied decorative art in Hamburg. After coming back from Germany the same year, Antokol'skii settled in Moscow, where he worked as a portraitist and a monumental painter, and painted topics connected to Jewish religion, everyday life and history. He was the deputy chief editor and the painter in *Maliarnoe Delo.*

[397] In 1931, Borchert married Sof'ia Matveeva, a graduate of the Monumental Painting Department of VKhUTEIN, a former intern, who came to work in Maliarstroi in 1930 and remained there until 1938.

Fig. 3.10. Maliarstroi Office of Design in 1931. Bottom row, left to right: Boris Ender, Sophia Matveeva, Hinnerk Scheper, Mrs. Ender (?), Erich Borchert; upper row, left to right: Leiba Antokol'skii, Igor Budkevich, Vladimir Zhuravlev.

1930, almost all VKhUTEIN students who graduated in monumental painting were required to take an internship at Maliarstroi.

Describing his contribution to Soviet economy in 1937, when applying for Soviet citizenship, Borchert wrote: „As a result of my work in practically all construction decoration organizations of Moscow new, much more sophisticated methods of work began to be applied; moreover, today, these new methods have so firmly entered construction practice that are perceived as something that goes without saying. Furthermore, due to my persistent work many construction mechanisms have become widely used. I was the first in the USSR to introduce the system of design of construction decorative works. Today, such design became a part of architectural-construction design." Among Borchert's color designs were Liublino Club of Moscow Railroad Workers; "The Government House" in Moscow; the Institute of Electric Energy; one of the workshops of Central Aviation and Hydrodynamics Institute; a workshop of a projector factory in Moscow; pavilions of All-Union Agricultural Exposition (together with another Bauhaus graduate Max Krajewski); a project for painting the city of Gorky (today, Nizhnii Novgorod). "Erich Willi Borchert. Biografia" [„Erich Willi Borchert. Biography"], *Erich Borchert v Rossii* [*Erich Borchert in Russia*] (Moskva: Izdatel'stvo im. Sabashnikovykh, 2008) 18-19.

In 1939 Borchert, after much trouble, was finally able to receive Soviet citizenship. In 1941, after the entrance of the USSR into the Second World War, he was drafted, but sent, as a German, not to the war front, but to a construction of an aluminum plant in Kamensk-Ural'skii in the Ural mountains. In 1942, he was arrested and accused in preparing a diversion on a heat station and in planning to shift on the side of the German troops. In 1944, he was sentenced to twenty years in a labor camp; the same year he died in Karaganda transit camp at the age of 37.

Considering Maliarstroi as a point of introduction of Western technology into the backward USSR, it seems to be more than a coincidence that all the key members of the Design Office were either ethnic Germans or had a perfect knowledge of the German language. Ender came from a German family.[398] Antokol'skii was of a Lithanian Jewish background. In 1936-1937 Maliarstroi also employed a German sculptor Will Lambert. Finally, although not an official member of the trust, Moisei Ginzburg (who was born into a Jewish family in Minsk and knew Yiddish) collaborated closely with Maliarstroi as the head of the Section of Typification of Stroikom and as a personal friend of Scheper, whom he first met during his 1927 visit to the Bauhaus.[399]

The functionalist German interpretation of the tasks and goals of wallpainting and art in general, which for a moment seemed the most rational, economic and therefore best suited to respond to the condition of the forced modernization that the Soviet Union was undergoing, became the official position of Maliarstroi. For Scheper and Borchert—as it was for Ginzburg, Meyer, Stokolov and Sestroretskii—art and architecture lost their autonomy and had to be reconfigured within the framework of technical and organizational activity. Psychologized, art could no longer be governed by its laws and principles, and could not address an autonomous, coherent and individual subject. Artistic choices were now to be motivated by considerations of function and rationality alone. Moreover, wallpainting in Maliarstroi differed from traditional mural painting in that it was indefinitely reproducible and performed with the help of technical

[398] Boris Ender was a great-grandson of a German glass designer from Saxony who settled in St. Petersburg and whose family carefully kept their knowledge of German language and traditions. Like all the members of the Ender family, Boris Ender was educated in the German Petersschule in St. Petersburg.

[399] Among the other members of Scheper's circle in Moscow alongside Alexei Gan and Esfir' Schub, El Lissitzky and Sophie Küpers, and Kazimir Malevich. Scheper, *Vom Bauhaus geprägt*, 93 (footnote 34).

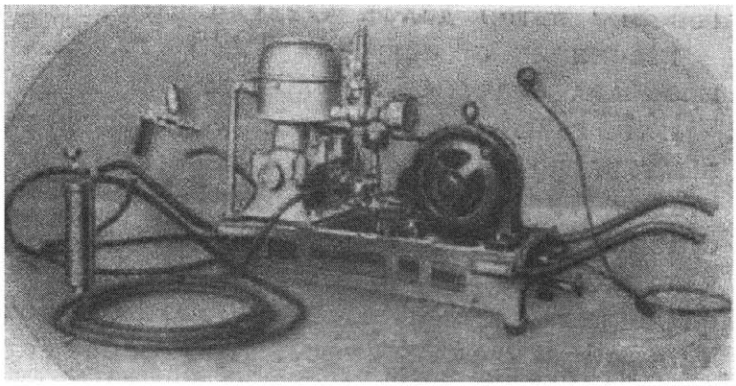

Fig. 3.11. Machine for a pneumatic spraying of paint. Maliarstroi, 1930.

instruments, such as a machine for the pneumatic spraying of paint, which Maliarstroi intern P. F. Katichev in 1930 described as one of Maliarstroi's major achievements.[400] The economic benefit of such a mechanization was, for Katichev, obvious: "only five people will be needed with this painting method where previously, for example, fifty people worked." [401] In other words, just as their subjects were, wallpainters themselves were dehumanized, bereaved of their individuality and autonomy, of the illusion of creativity, and transformed into technological specialists operating with knowledge rather than intuition.

This program left many discontented among the graduates of VKhUTEIN, particularly, from its rather more traditionalist Painting Department, who refused to abandon the individualist concept of artistic work even though it was cost- and labor-intensive. The same Katichev, who graduated from the Painting Department of VKhUTEIN in 1930 and immediately started working in Maliarstroi (publishing his enthusiastic article about its technical achievements in September of the same year) was quickly disenchanted in Maliarstroi's technicalism. In January of 1931, he initiated a public attack on Maliarstroi on the pages of journal *Za proletarskoe*

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[400] P. Katichev, "Khudozhnik-stroitel'" ["Artist-builder"], *Iskusstvo v massy* [*Art to the masses*], 1930, No. 9 (17), 14.

[401] P. Katichev, "Khudozhnik-stroitel'" ["Artist-builder"], *Iskusstvo v massy* [*Art to the masses*], 1930, No. 9(17), 14.

iskusstvo [For a proletarian art] in an article titled "*Funktsionalistskoe zasil'e*" ["A Functionalist Sway"]. The technologization of wallpainting, Katichev argued, had to consist not in abandoning the individual work of the artist, but rather in rationalizing, and promoting this work by technical means. Soviet muralists, according to Katichev, had to become something akin to today's graffiti artists, who spray rather than brush-paint propaganda images on walls. Borchert responded to his former intern on the pages of *Maliarnoe delo,* accusing him of technological incompetence and a dangerous idealism that concealed from him the real tasks of the day. Only a lack of knowledge, Borchert believed, could have led Katichev to conclusions that were both erroneous and dangerous for the Soviet economy. What the economy needed were scientists rather than artists: "...We need people that, first of all, think rationally, economically and, of course, 'functionally.' Those whose working field is limited by a low horizon, dreamers-romantics that fuss over their petty 'I' (the price of which we know all too well), cannot be of any use to us."[402] The functionalist ideology of Maliarstroi, based on a preoccupations with economy and rationality, had no place for subjectivity, whether of the designer or of the user of architecture:

> What is the ideology of Maliarstroi? The design office of Maliarstroi develops its color schemes on the basis of scientifically studied conclusions of lighting engineering, physiology and psychology. Starting from the data of technical devices, the design office researches the basic demands of the human in the colored environment and follows them in its design work. The projects are executed with those methods that are most understandable for the builder, give the best general color impression, and are executed rationally, with the least expenditure of resources and time. It is not an "abstract play of colored planes"... but quite a real work, based on real prerequisites, because the rule of

[402] Erich Borchert, "Funktsionalistskoe zasil'e (v poriadke polemiki)" ["Functionalist sway (by way of polemics)"], *Maliarnoe Delo* [*Wallpainting*] No.3 (1931): 32-38 (38). Translation by the author. Russian original: «И для этого нам нужны люди, которые прежде всего мыслят реально, экономично и конечно «функционалистично». Нам никакой пользы не смогут принести те, у которых рабочее поле ограничено низким горизонтом, мечтатели-романтики, которые носятся со своим маленьким «Я», цену которого мы хорошо знаем».

every design and color setting, in particular, are the needs of a human organism taking into account the given means.[403]

Developed by Scheper with the first directors Stokolov and Sestroretskii and described by Borchert, the functinalist ideology of Maliarstroi nevertheless did not discard the question of subjectivity altogether. On the contrary, it placed the perceiving subject at the center of its program. The subject, however, was as dehumanized as the artist that created him. Reduced to the bearer of "basic demands of a human in color," this subject was not an individual with his private memories, associations, and tastes, but an object of scientific analysis, a sum total of a minimal number of key properties of perception, a standardized and homogenous biological being. In order to operate with this being, psychophysiology, psychotechnics, and other contemporary empiricist approaches in psychology were to be utilized.

The polemics around wallpainting continued, attracting more and more attention as its object widened to the status of art in general. In February 1931, Vladimir Kostin[404] submitted in

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[403] Borchert, "Funktsionalistskoe zasil'e," 34. Translation by the author. Russian original: «Что такое идеология Малярстроя? Проектное бюро Малярстроя прорабатывает свои красочные планы на основании научно-проработанных выводов светотехники, физиологии и психологии. Исходя из данных технических средств, проектбюро исследует основные требования человека в отношении красочного окружения и проводит их в своем проектировании. Проекты выполняются теми изобразительными методами, которые наиболее легко поняты строителю, дают наилучшее общее красочное впечатление, выполняются рационально, с наименьшей затратой средств и времени. Это не есть «беспредметная игра цветных плоскостей», как думает автор «Функционалисткого засилья»... но вполне реальная работа, базирующаяся на имеющихся в действительности предпосылках, ибо закономерностью всякого проектирования и красочного оформления в частности являются потребности человеческого организма с учетом имеющихся в наличии средств».

[404] Vladimir Ivanovich Kostin (1905-1991) was a Soviet painter, who studied in the studio of Ivan Mashkov and the Central Courses of Association of Artists of Revolutionary Russia (AKhR) in Moscow between 1923 and 1928, and subsequently worked as an art critic for newspaper *Komsomol'skaia Pravda* [*Komsomol Truth*] (from 1930), the editor of the Poster Workshop of publishing house Izogiz (1930-1931), and the deputy head of Moscow IZOMRAM (1931-1932). For his short autobiography see V. I. Kostin, *Sredi khudozhnikov: khudozhniki i proizvedenia. Stat'i ob iskusstve 20-kh i 30-kh godov. Stat'i po voprosam sovremennogo iskusstva.*[*Among Artists: Artists and [Their] Works. Articles on the Art of the 1920s and the 1930s. Articles on Contemporary Art*] (Moskva: Sovetskii khudozhnik, 1986) 166-167.

to the editors of *Za proletarskoe iskusstvo* an article entitled "*Arkhitektura i tsvetopis*" ("Architecture and Coloring"), which he wrote with a prominent Soviet aesthetic thinker and art critic of the 1930s, a supporter of empiriocriticism and psychophysiological aesthetics, the Hungarian-born Ivan Matsa.[405] The article meant to defend the project of wallpainting, curing its functionalism and reconciling it with the more familiar humanist notion of art and with orthodox Marxist aesthetics, but instead only aggravated the situation by making the anti-humanist bias of wallpainting as a technique of subject formation all too visible. First, Kostin smuggled back the notion of art, which Maliarstroi and Ginzburg rejected: "If one takes painting as the art of color, in a room we will have perhaps the most 'pure,' abstract kind of painting. It would be best to call this kind of painting *tsvetopis'* ["a depiction of color," from *tsvet*, color, and the root *–pis'*, from *pisat'*, to write or paint, such as in the word *zhivopis'* (painting), which etymologically means "depicting life"]."[406] For Kostin, a painter, due to his artistic experience rather than an abstract theoretical knowledge, knew the mechanism of a human psyche better than a scientist, and was better suited for the task of producing subjectivity. But although he worked intuitively, a painter had to achieve the same results as a scientist.

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[405] Ivan Liudvigovich Matsa (Hungarian, János Mácza, 1893-1974) was a member of Hungarian avant-garde (collaborating in journals *Tett* and *Ma*), who in 1923 moved to Soviet Russia, where he actively taught (since 1930, a professor at Moscow State University) and published on aesthetics and the history of art and architecture; in 1928-1932 he participated in the "October" art movement.

Although already in July 1931, Kostin asked the editors to withdraw his article, they still published it as "a characteristic document of mechanistic views in art criticism, right opportunism in left clothing, theoretical substantiation of the replacement of art with technology," against which one had to lead a "firm and relentless struggle." "Ot redaktsii" ["From the editors"], *Za proletarskoe iskusstvo* [*For a Proletarian Art*], No.8 (1931): 4.

[406] V[ladimir] Kostin, "Arkhitektura i tsvetopis'" [„Architecture and coloring"], *Za proletarskoe iskusstvo* [*For a Proletarian Art*], No.8 (1931): 4-6 (4). Translation by the author. Russian original: «Если рассматривать живопись как искусство цвета, то в комнате мы будем иметь самый «чистый», абстрактный вид живописи. Лучше всего этот вид живописи назвать цветописью».

> It is clear that an artist, who every day deals with color and paints, has to know the force of the impact of these or those color harmonies, combinations and contrasts better than anyone else. He knows more closely than anyone the methods of treating a surface with color and the impact of color upon human psyche. An easel artist, who performs a large, serious laboratory work with pieces of canvas in his workshop, can apply this richest experience to "colorful screens," that is, the walls of rooms.[407]

Moreover, Kostin attempted to reconcile the biologism of Maliarstroi with Marxist sociological aesthetics. Each social group, according to him, had its own psychological response to color, based on its ethical values and ideological associations: "A pink petty-bourgeois room and an orange lamp shade arouse in a philistine a certain feeling of satisfaction, coziness and repose, whereas in a person with a stronger ideological mindset the same room provokes only a feeling of contempt—not to mention that the color of the red flag agitates the fascist like a lash of whip, whereas in a proletarian it arouses the feeling of class solidarity and might."[408] To add to the complexity of social responses to color, even within the same group a color could evoke conflicting connotations: "the same fascist, for example, could very much like the red wallpaper of a female boudoir or the red blouse of his mistress."[409] While the fascist suffered from an internal conflict of emotional responses, affected by both individual memories (*his* mistress) and

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[407] Kostin, "Arkhitektura i tsvetopis,'" 5. Translation by the author. Russian original: «Ясно, что художнику, имеющему каждый день дело с цветом и красками, лучше всего должна быть известна сила воздействия тех или иных красочных гармоний, сочетаний и контрастов. Ближе всего ему знакомы способы цветовой обработки плоскости и воздействие цвета на психику человека. Этот богатейший опыт лучше всего может применить к «цветным экранам», т.е. стенам комнат, художник станковист, проделывающий большую, серьезную, лабораторную работу над кусками холста у себя в мастерской». "Colorful screens" is a quotation from Moisei Ginzburg's article "Tsvet v arkhitekture" ["Color in architecture"], *Sovremennaia Arkhitektura* [*Contemporary architecture*], No.2 (1929): 74-77.

[408] Kostin, "Arkhitektura i tsvetopis,'" 5. Translation by the author. Russian original: «Розовая мещанская комната и оранжевый абажур вызывают у обывателя известное чувство удовлетворения, уюта и покоя, тогда как эта же комната у человека с более крепкой идеологической установкой вызывает только чувство презрения, не говоря уже о том, что цвет красного флага будоражит фашиста как удар кнута, тогда как у пролетария возбуждает чувство классовой солидарности и мощи».

[409] Kostin, "Arkhitektura i tsvetopis,'" 5. Translation by the author. Russian original: «Тому же фашисту, например, могут очень нравиться красные обои женского будуара или красная кофточка его возлюбленной».

social associations (red as a symbol of sexual promiscuity), the proletarian was organized more rationally, not burdened by individual memories, affections and associations and thus more suitable for a psychophysiological analysis. For Kostin, biologism was, in a way, the identity of the proletariat.

Bringing in chance and unpredictability, and thus precluding a possibility of total planning, individualism was the nightmare of the Soviet culture of the First Five-Year Plan. In spite of the fact that both Scheper and Borchert, while in Germany, allowed a much wider space for individuality, the fear of individualism became pertinent to their work in the USSR. Thus, writing in Moscow in 1931, Borchert conceived of wallpainting as a technique of overcoming the troubling differences in individual tastes and associations. A color scheme for him had to appeal to all and, being one and the same for everyone, was to work against rather construct individuality. Every wallpainting scheme should contain contrasting colors with the expectation that everyone would find those that appeal to him or her among them. Suitable for everyone, the solution was to be accepted by all—thus the individual was acknowledged but subjugated to collective.

> Since people are not normative beings, it is impossible to develop precise norms for the color design of a human dwelling. Every person can be completely individual in this respect, and at the same time the tendency of behavior of every single person and his sphere of activity can be viewed and evaluated on the basis of collectivism.
>
> People differ in that everyone demonstrates a different degree of internal elasticity and, consequently, every person can and will seek after completely unique color possibilities, as these differences in color and taste are manifested in the choice of clothing. The color needs of a person change as much as the balance of [his or her] internal elasticity. The need for color sensations is basic to all humans, but this need is not permanent and is individually expressed.

This is why color design has to be based on the laws of "polarity," that is, every color has to be counterbalanced with a maximum of compensation and contrast.[410]

This animosity towards individualized design was new for Scheper and Borchert. For example, in Germany both designers were actively engaged in the production of the so-called Bauhaus-Tapeten, a cheap and quick method of interior decoration utilized during the construction of the Siedlung Törten in Dessau in 1926-1928, but they never expressed any suggestions for the use of wallpaper in the Soviet Union.[411] Of course, the mass production of wallpaper might have required resources and technologies that the USSR did not then possess, or possessed but required for other, more strategically important, purposes. Nevertheless, the work of Ginzburg, Scheper, Borchert, as well as many other Soviet architects and designers in the late 1920, was in general experimental and "laboratory," and one might wonder why the development of a prototype for a cheap, easy to use, and long-lasting wallpaper did not become

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[410] Erich Borchert, "Krasochnoe oformlenie zhilishch" ["Color design of dwellings"], *Maliarnoe Delo* [*Wallpainting*], No.1 (1931): 8-9. Translation by the author. Russian original: «Поскольку люди отнюдь не являются нормированными существами, нет возможности выработать точные нормы для красочного оформления человеческого жилища. Каждый человек может быть в этом отношении совершенно индивидуальным, и в то же время линия поведения каждого отдельного человека и род его занятий могут рассматриваться и расцениваться на коллективистическом основании.

Люди отличаются между собой тем, что каждый обнаруживает различную степень внутренней эластичности и следовательно каждый человек может и будет стремиться к совершенно своеобразным цветным возможностям, подобно тому как сказываются эти цветовкусовые различия у разных людей при выборе одежды. Насколько у каждого отдельного человека время от времени меняются соотношения его внутренней эластичности, настолько же могут меняться его цветовые потребности. Потребность цветовых ощущений присуща всем людям, но потребность эта не постоянна и проявляется индивидуально.

На этом основании красочное оформление должно базироваться на законах «полярности», т.е. каждому цвету должно быть противопоставлены максимальное компенсирование и контраст».

[411] As Renate Scheper suggests, the Bauhaus-Tapeten originated, in part, from the general Bauhaus impetus towards the integration into industrial production (the production of wallpaper allowed artists to work together with industry), and, in part, from a practical need to provide cheap and fast means of interior decoration during the construction of the Siedlung Törten in Dessau, which included as many as 314 houses, in 1926-1928. Scheper, who studied together with Maria Rasch, the sister of Emil Rasch, the chef of Hannoverschen Tapetenfabrik Gebrüder Rasch & Co, brought the idea to life through his personal input and the connection; until his move to Moscow, he was in charge of the production of the wallpaper. During his leave, Borchert, then still a student, successfully took over this work. Scheper, *Vom Bauhaus geprägt,* 51-52.

one of their priorities. The answer comes from the consideration of another major modernist architect and painter, who actively developed the potential of color for architecture, but who in comparison with the Soviet and the Bauhaus designers retained a great deal of aestheticism and individualism in his approach to architecture—Le Corbusier. In 1931, around the same time the Maliarstroi's wallpainting program was being developed, Le Corbusier introduced *Salubra*, his personal wallpaper line. Presaging the tactics and strategies of consumer society, which equated market selection with personal freedom, Corbusier marketed *Salubra* as an outlet for owners' individual tastes and and an area for their creative input into the design of their houses.[412]

> 'There is no accounting for tastes…', a popular adage expressing the multiplicity of sensorial and psychic outcomes provided by the innumerable combinations of a few fundamental elements.
>
> It is, in this imperative verdict of 'personal taste', the proof of the impossibility to pretend to bend men under a single rule. This imperative verdict on personal taste is the forceful, organic and deep-rooted confirmation of everyone's right to individual freedom.
>
> Countless harmonies are therefore possible, are licit, are exact, equivalent of fundamental values of human existence. At the wallpaper merchant, this instinctive awareness with its own law drives each individual towards a choice which, at a certain point, asserts itself, is imperative. Here, the destiny of the customer manifests itself: 'I am like that!'[413]

Wallpaper, indeed, left the question of the psychological effect of an environment to the accidental and individualist tastes and preferences of the tenant. It was, moreover, easily replaceable and thus produced a psychological effect of in the environment that was outside of

[412] On the Salubra, sees De Heer, *The Architectonic Color*, 142-164.

[413] Le Corbusier, "Polychromie architecturale," *Polychromie architecturale: Le Corbusiers Farbenklaviaturen von 1931 und 1959,* 94, or De Heer, *The Architectonic Colour*, 219. Translation by De Heer.

the architect's control. Finally, since it was universally applicable and replaceable, it did not satisfy the aim of supporting concrete functional processes within a given room or a building.[414]

Unlike wallpaper, paint was permanent and remained under the control of the architect. It allowed for a much deeper level of standardization—not of colors, design patterns and the techniques of their production, but of the very process of perception and accordingly of the sensory impressions that a subject received. Since according to psychophysiological aesthetics, the subject was a product of its own sensory experience, by insisting that everyone receives the same color impression, wallpainting aspired to nothing less than a standardization of the subject itself.

However, Le Corbusier's words should not simplybe taken at face value. Although in general Le Corbusier is representative of canonical "individualist" modernism, *Salubra* in fact offered few opportunities for self-expression: the style, design, and tone of the wallpaper was tightly controlled by the architect. Thus this example undermines rather than affirms the dichotomy between humanist and posthumanist modernism. The politics of standardization and planning within the general framework of the industrial economy did not emerge in isolation. Rather the standardized subject that emerged in the Soviet Union in the late 1920s is tied to and partially inherits aspects of the subject of early industrial capitalism that preceded it in the West, as well as the subject of the contemporary consumer society that evolved in parallelwith it.

[414] Le Corbusier's project consisted in finding a balance between a desire for personal self-expression that wallpaper offered and the limitation of this desire for the sake of obeisance to the laws of perception, which remained within the professional domain of an architect. See De Heer, *The Architectonic Colour,* 217-218. These laws, for Corbusier, consisted in the limitation of color with tone (the saturation of color with white or black), which remained the job of a painter or architect.

The Economy of Working Energy

According to the ideology of Maliarstroi, because they were susceptible to its influence, workers could be transformed by standardized art, acquiring a better and more economical psychological and bodily organization. In this respect, Maliarstroi functioned in the context of the sciences of labor and social engineering, which flourished in the USSR under a patronage of the government throughout the 1920s, and aspired to turn Soviet workers into clusters of energy that would contribute to a better, smoother and more efficient Soviet economy. Writing about the color plan for the city of Moscow in 1931, *Moskauer Rundschau* outlined the creation of an energetic, active, cheerful, enthusiastic, diligent, and collectivist person as the goal of re-painting the city:

> It follows from the essence of socialist society that not only material factors—the location of production, transportation etc.—become the matter of concern, but also the questions of mass psychology. A socialist city is the place of living and working for people who work physically and intellectually for their own and everyone's benefit, who are not shriveled by capitalist profit and capitalist oppression, who gather together for a social goal, who seek internal contemplation and spiritual stimulation in artistic pleasure and [who seek in] sports exercise and a balance of energy. ... A city has to become not only a place where social energies function, but also where they are aroused.[415]

[415] Julian, „Moskauer Farbenlehre," *Moskauer Rundschau* Vol. 46 (1931). Translation by the author. German original: „Aus dem Wesen der sozialistischen Gesellschaft ergibt sich, dass bei der Entscheidung darüber nicht nur materielle Faktoren—Standortsfragen der Produktion, Verkehrsbedingungen etc.—in Frage kommen, sondern auch massenpsychische Momente. Die sozialistische Stadt ist Wohn- und Tätigkeitsort von Menschen, die zu ihrem und zum allgemeinen, durch keinen kapitalistischen Profit und durch keine kapitalistische Unterdrückung verkümmerten Nutzen physisch und geistig arbeiten, sich zu sozialem Zweck versammeln, in künstlerischen Genüssen innere Sammlung und seelische Antriebe, im Sport Uebung und Ausgleich der Kräfte suchen. ... In der Stadt wirken sich nicht nur die gesellschaftlichen Energien aus, sondern sie soll auch neue wecken."

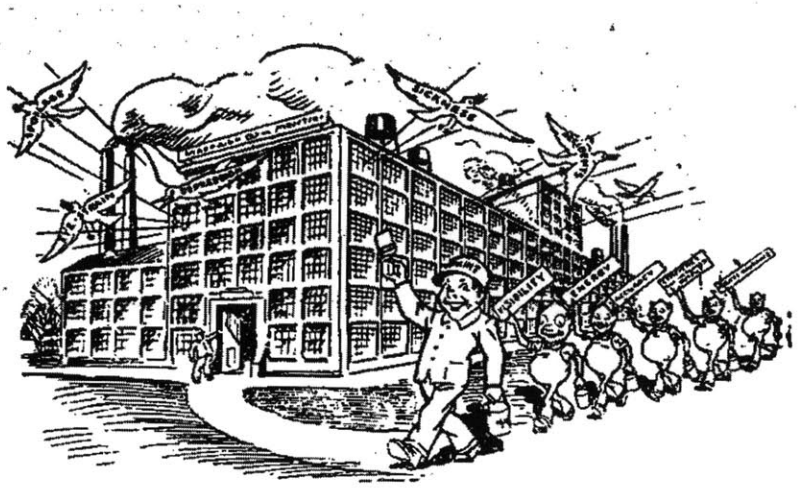

Fig. 3.12. Industrial Painting Company, Montreal. Advertisement reproduced in *Maliarnoe Delo* in 1931.

Soviet psychologists of labor enthusiastically cited an example of the American shoe factories of Doherty and Donovan and of a rubber and tobacco factories in Hamburg, where bright colors used in the interiors were said to arouse the workers' enthusiasm and even their tidiness.[416] Another example was the Industrial Painting Company in Montreal, which publicized its successful campaign for an introduction of color in factories with a poster depicting spoilage, fatigue, depression, and accidents flying out of the factory with the arrival of wallpainters, who carried in their paint buckets visibility, energy, accuracy and other prerequisites for an efficient and healthy working environment.[417]

The diverse psychophysiological research conducted in Soviet Russia in the 1920s established that color exerted a direct physiological effect upon a human subject: red, yellow and orange intensified the activity of the circulatory system, made the chest breath stronger than the abdomen one and made the pulse—more frequent and distinctive. Blue and violet, on the

[416] See "Vliianie okraski fabriki na proizvoditel'nost' truda rabochikh" ["Impact of factory coloration on the productivity of workers' labor"], *Maliarnoe Delo* [*Wallpainting*] No.2 (1931): 69.

[417] B. Shn., „Tsvetovoe oformlenie fabrichnogo oborudovaniia" ["Color design of factory machinery"], *Maliarnoe Delo* [*Wallpainting*], No. 4 (1931): 58-60.

contrary, depressed the circulation processes, slowing and weakening the pulse.[418] Soviet psychologist Sophia Beliaeva-Ekzempliarskaia, who lectured in the Higher Institute of Architecture and Construction (VASI, that inherited VKhUTEIN in 1930) explained on the pages of *Maliarnoe Delo* that colors could produce two kinds of fatigue: general (manifested in a reduction of sensitivity, photophobia, soreness), and local (general tiredness that influenced the work of a person). According to Beliaeva-Ekzempliarskaia, fatigue was most easily provoked by violet, followed by red, while the least tiring color was green.[419] The results of research on the influence of color upon physiological processes allowed psychologists to give practical suggestions on the use of color as a background for work spaces, on the noticeability of colors and on the use of colored light.[420] But most importantly in the USSR, the study of the physiology of color perception was merged with the results of ergography, a science that analyzed the patterns of physical fatigue.

In 1884, Turin physiologist Angelo Mosso invented "ergograph" (literally, register of work) that measured the bodily manifestations of fatigue in the forearms after lifting a weight.[421] Ergography, the first official name of the science of fatigue, which it received in the 1900s after Mosso's instrument, explored the wearing influence of external and internal physiological factors

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[418] F. Stefănescu-Goânga, „Experimentelle Untersuchungen zur Gefühlsbetonung der Farben," *Psychologische Studien*, Vol. VII, No.t 2 (1911).

[419] S[ofia] Beliaeva-Ekzempliarskaia, "K voprosu o vybore tsvetov dlia okraski rabochikh pomeshchenii" [„To the question of selecting colors for working spaces"], *Maliarnoe Delo* [*Wallpainting*], No. 5-6 (1932): 8-11 (9).

[420] Beliaeva-Ekzempliarskaia, "K voprosu o vybore tsvetov dlia okraski rabochikh pomeshchenii," 10-11.

[421] For a description of Mosso's ergograph, see A[ngelo] Mosso, *Fatigue*, transl. Margaret Drummond and William B. Drummond (New York: G.P. Putnam's Sons, 1904) 82-88, and Anson Rabinbach, *The Human Motor: Energy, Fatigue, and the Origins of Modernity* (New York: Basic Books, 1990) 134. Among the first ergographers were Ernest Solvay, Josefa Ioteyko and Charles Henry in Belgium, Jules Amar and Armand Imbert in France, Hugo Kronecker in Germany. More on ergography, see Rabinbach, *The Human Motor,* 133-142.

(temperature, rhythm, blood chemistry, etc.) upon a body. Especially well-known in Soviet Russia was the work of Mosso's follower, French physiologist Charles Féré. In *Sensation et movement* (1900), Féré described the "dynamogenity" of colors as a row—red, orange, green, yellow, blue—which he established by measuring with a dynamometer the muscle strength of the arm of a subject facing a glass or a colored plate. The results were confirmed by experiments that used a different apparatus, the plethysmograph, which measured the volume of blood flowing into the limbs, under the influence of the same irritants. In *Travail et plaisir* (1904), a study specifically devoted to working energy, Féré described his ergograph, a modification of Mosso's, which registered working energy by marking the height at which a weight could be lifted; the results were then considered to exemplify any type of muscular work. Conducting ergographic experiments under the light of various colors, Soviet psychologists established that green was the best color for stimulating work, whereas red, increasing the energy initially, soon induced fatigue, while blue and violet exerted a depressing effect.[422]

In the Architecture Department of VKhUTEIN, the research on the effect of color upon the energy balance of a person was conducted by both the Rationalists and the Constructivists. In 1929, with the help of the Institute for Mass Psychology, Ladovskii's Psychotechnical Laboratory planned to start an "experimental investigation of the role of color in interior architecture," focusing, in particular, on the "psychophysiological impact of color" and color's "spatial role." The task was subdivided into several steps, which involved the investigation of:

[422] Similar experiments were conducted in Leningrad in the reflexological laboratory of the Medical Institute and by prof. Vasil'ev, an assistant of Bekhterev, in 1920. See A. M. Lukina, "Vospitanie sochetatel'nogo refleksa na slozhnyi tsvetovoi razdrazhitel'" ["Education of combinative reflex for a complex color irritant"], *Novoe v refleksologii i fiziologii nervnoi sistemy* [*New in Reflexology and Physiology of the Nervous System*], ed. V. M. Bekhterev (Moskva: Gosizdat, 1925). Cited by Beliaeva-Ekzempliarskia, "K voprosu o vybore tsvetov dlia okraski rabochikh pomeshchenii," 9.

1. The impact of color upon the process of muscle labor (the method of ergographic curves.
2. The impact of color upon brain work (the method of constant tests under variable irritants, fixation of the speed of associations, etc.).
3. A verification of the dependence of acquired results on the combinations of color in qualitative and quantitative sense.
4. An investigation of the relationship of color and form. A measurement of spatial properties of form with the help of various coloration of its surfaces (a method of multiple introspective observation on a specially constructed apparatus).[423]

This experimental study of interior color and its effects upon subjectivity was probably the sphere of architecture in which the interests and methods of the Rationalists and the Constructivists came closest: Ladovskii's characteristic focus on experimental investigation and scientific testing of physiological responses followed the Constructivists's work on spatial properties of color and, likely, benefited from the work of Mikhail Barshch—a Constructivist who became Ladovskii's doctoral student at VKhUTEIN. Barshch's dissertation aimed to develop "such a [working] environment and such methods of work that would ensure the maximum productivity of labor without jeopardizing the health of the worker."[424] Barshch defined the scope of his research as a study of the psychophysiological impact of color upon the productivity of a worker (through the central nervous system), which he saw happening on several levels: associative (order, disorder, neatness, dirt, isolation, unification, reflective connection of the environment with the sensation of fatigue), acoustic (silence, noise, rhythm), optical (the form and size of the room, its lighting, the color and facture of walls).[425]

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[423] G[eorgii] Krutikov, "Arkhitekturnaia nauchno-issledovatel'skaia laboratoria pri arkhitekturnom fakul'tete VKhUTEIN," *Arkhitektura i VKhUTEIN* [*Architecture and VKhUTEIN*] No.1 (1929): 2-4 (4).

[424] Mikhail Barshch, "Vliianie zritel'nykh vpechatlenii na trudovye protsessy" ["Impact of visual impressions on working processes"], *Sovremennaia Arkhitektura* [*Contemporary Architecture*] No. 2 (1928) 72. Russian original: «такую обстановку и такие методы работы, чтобы производительность труда была максимальной и чтобы эта производительность поддерживалась на высоком уровне без вреда для здоровья трудящихся».

[425] Barshch, "Vliianie zritel'nykh vpechatlenii na trudovye protsessy."

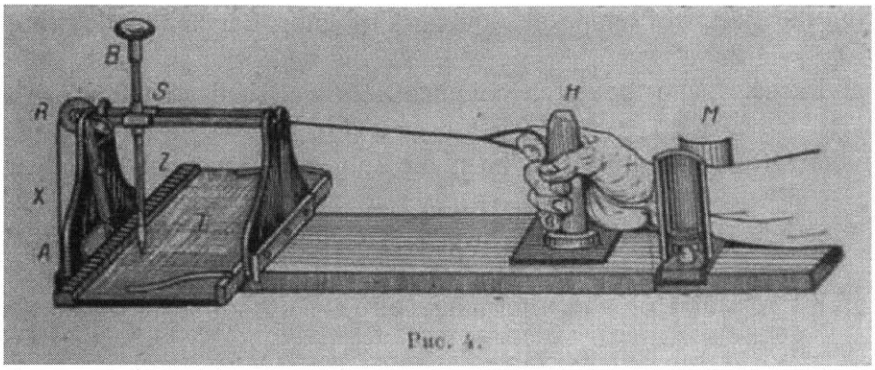

Fig. 3.13. Fere's ergograph. Drawing from S. S. Alekseev, B. M. Teplov, P. A. Shevarev. *Tsvet v arkhitekture* (1934).

Particularly interested in the ergograph, Barshch carefully described the results of Féré's experiments, which allowed him to offer Soviet architects a system of dynamogenic properties of colors and a consideration of the variability of these properties.[426] Red was described as the most dynamogenic at the beginning, but then quickly lost its power; orange and yellow had a constant and permanent effect; green gave a moderate stimulation at the beginning and preserved a steady positive effect afterwards; blue and violet initially exerted a depressing effect but could defer fatigue if used for a long period of time. In a second group of experiments examined by Barshch, Féré intertwined the effect of colored light with that of white light and discovered that all colors but violet increased their dynamogenic effect following white, while the work measured in the white light following a colored light (apart from blue or violet), substantially decreased. In the third series of experiments, Féré alternated various colors and discovered that a more dynamogenic light taken after a less dynamogenic (red after blue) demonstrated an increased working energy. Moreover, Féré discovered that the effect of colors depended on the time of day and the state of the subject: colors that depressed in the morning (blue and violet) became stimulants during the daytime, and vice versa.

[426] Barshch, "Tsvet i ego rabora."

Exploring the effects of temporal sequences of color, Barshch made ergography relevant for architects and artists, who looked at colors in terms of their combinations and harmonies. Indeed, the mutual effect of colors had been the subject of study of Soviet artists and color theorists before the late 1920s. Matiushin, for instance, developed his system of color harmonies on the basis of his research on the afterimage effect. Psychologist Sergei Kravkov, one of VKhUTEIN Color course teachers, studied the effect of color fatigue (that occurred when an eye became used to the color to which it was exposed for a period of time) and the processes of color adaptation, suggesting practical ways to avoid fatigue by carefully designing the transitions between colors.[427] Finally Lushin's "Practicum of Color," contained an exercise on observing, measuring, and comparing the effects of color fatigue.[428] To these studies of the relationships of colors and their harmonic combinations (studies that were predominantly performed by painters) the research of Barshch added the topic of working productivity, which was thus introduced into the sphere of an architect's competence.

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[427] S. V. Kravkov, "Ob adaptatsii glaza k tsvetnym razdrazhiteliam" ["On the adaptation of the eye to color irritants"], *Zhurnal prikladnoi fiziki* [*The Journal of Applied Physics*] Vol. V, No. 2 (1928). See also: Beliaeva-Ekzempliarskaia, "K voprosu o vybore tsvetov dlia okraski rabochikh pomeshchenii."

[428] Exercise 21, "Observing the phenomena of color fatigue" stipulated: "Given are two pieces of paper, one of a chromatic tone (red for the first example and blue for the second), the other of an achromatic one (black). With the black paper, one covers a half (up to the marked dot) [of the chromatic paper] and looks at the dot for 5 seconds; after taking the black paper away one sees that the part of the [chromatic] paper that was covered seems brighter and more saturated in comparison with the one that was not.
Observing this difference, we notice that after a certain period of time it disappears and both parts become equal in brightness. The same [we] repeat for 10 seconds, etc., until the period of a disappearance of the difference does not become the same.
Therefore, if a color irritant affects our eye for a certain period of time, the sensitivity of the eye to this irritant begins to diminish. It seems that the colors became dull, similar to each other. This is why, before a long assignment, it is so important to paint quick sketches to fix the impression of the tone and color specifics of nature." Aleksandr Liushin, "Practicum of color theory." Unpublished manuscript. Getty Research Library.

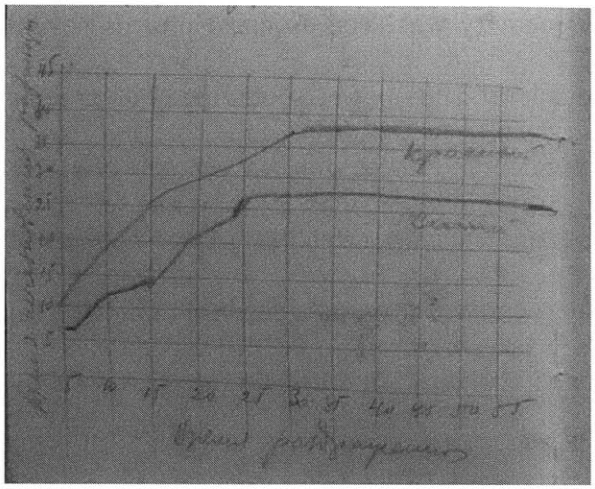

Fig. 3.14. Aleksandr Lushin. "Practicum of color theory." Student exercise book (VKhUTEIN, 1928-30). Exercise 21: Observing the effects of color fatigue.

Although focusing on ergography, Barshch outlined a program for a much broader usage of the physiology of color perception in architecture. The discoveries of Féré, according to Barshch, had to be applied to various kinds of labor: receptor (based on the work of perceiving organs, such as the labor of an accountant or a typesetter), effector (physical work) and cerebral (intellectual work), and of various different factors of the environment: the dimensions and the shape of the room, its proportions and parts, the shape and location of light openings, and of the color and facture of walls, ceilings and floors. This program listed all the major psychological and architectural interpretations of the role of color, offering an open interpretation of the notions of energy, work, and fatigue. As every physiological and mental activity was, in a sense, a kind of work, it was the task of the architect to ensure the optimal functioning of all bodily, mental, and perceptive processes in order to economize the energy that would otherwise have to be spent. Moreover, just like work, fatigue could belong to different domains of experience: not being confined to physical and mental, it could, for example, be aesthetic, connected with the feeling of boredom and the loss of acuteness of perception.

By the late 1920s, ergography as a narrowly defined interpretation of energy as physical labor power was already put aside by other psychological theories. In particular, in the late 1920s Soviet psychologists developed a concept of "activity" [*deiatel'nost'*] as any conscious effort of a person, everything that strives towards a goal. In the works of the circle of Lev Vygotskii

(especially those of his student Aleksei Leontiev) activity was seen as consisting of several hierarchical levels: as the most general and conscious level, activity was subdivided into actions; these consisted of operations, which in turn were divided into unconscious psychophysiological functions. A perfect exemple of the modernist totalizing tendency, which aspired to connect all physical and mental phenomena into a unified system oriented towards a final and unique goal, activity theory mirrored the emerging Soviet planned economy, in which the central planning office rationally managed and coordinated the relationships between different production centers: the hierarchy of consciousness was reflected by the hierarchy of decision-making power within the Soviet system.

Such an expanded understanding of work as activity was pertinent to Maliarstroi, which aspired to optimize every aspect of people's daily and productive lives. For example, in a lecture that Boris Ender gave to a group of wallpainters as late as 1936, he highlighted the connection between the unconscious, physiological process of color perception and higher, conscious and socially meaningful activity:

> My task in front of you, specialists dealing with color, is to help you eliminate the colorful chaos, with which our life is still littered. We are turning away from an unprincipled, goal-less, content-less [*bessoderzhatel'nyi*] and ignorant, unorganized, taste-based, primitive, sensual beauty. We are turning away from fragmented, torn, centimeter coloration. We have to direct painting in kilometers into our life. Let color also become a building material in our construction of socialism.
>
> Imagine that in a factory, walls, machines, and production clothes are not only given a special color, but that these colors are combined in a way that increases working productivity. Imagine that in hospitals walls, curtains, blankets, and furniture are harmonized in such a way that the patient heals sooner and better. That in a theater, the impression increases due to the color design in a way that is not yet practiced. The same

> in a book, in a First-of-May parade, on a railway station, in the metro. I argue that you must organize color.[429]

Ender put an emphasis not on separate various processes, but on bringing them together, on putting them in a harmonic relationship, on organizing them; a wallpainter, for Ender, operated with physiological functions in order to stimulate operations and that would become actions, which, in turn, would contribute to the great common activity. As everything was intertwined, even physiological perception could be included into the economic plan.

The parallel to activity theory explains what might have otherwise seemed paradoxical: Maliarstroi concentrated not on preparing color schemes for factories, but on producing the designs for the spaces of workers' leisure, such as homes, clubs, canteens, theaters and cinemas. Indeed, in the orthodox Marxist theory leisure was defined as regaining the working energy that could only be spent in a factory;[430] now, this task was valorized as being productive in its own right. If in a classical capitalist society as Marx described it, leisure served to restore the labor power of the "human motor" in order to continue providing it to a capitalist in return for wages (and thus remained within the domain of responsibility of the worker himself), the purpose of Soviet workers was very different—contributing to the great common endeavor. Whereas active

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[429] Boris Ender, unpublished manuscript of a lecture on wallpainting, 1936. RGALI, Boris Ender collection. Translation by the author. Russian original: «Моя задача перед вами, специалистами, имеющими дело с цветом, помочь вам снять хаос цветовой, которым еще замусорена наша жизнь. Мы уходим от беспринципной, не ставящей задачи, бессодержательной и безграмотной, не организованной, вкусовой, примитивной, чувственной пестроты. Мы уходим от размельченной, разорванной сантиметровой расцветки. Нам нужно направить живопись в километрах в нашу жизнь. Пусть цвет станет тоже строительным материалом на нашем строительстве социализма.
Представьте, что на заводе стены, станки, производственная одежда не просто окрашены каждый своим каким-нибудь цветом, а сгармонированы в цвете так, чтобы повысилась производительность труда. Представьте, что в больницах стены, шторы, одеяла, мебель сгармонированы так, что больной скорей и крепче выздоравливает. Что в театре повышается впечатление от построенного цвета, как этого еще не делают. Тоже в книге, в первомайской колонне, на вокзале, в метро. Я утверждаю, что вы обязаны организовывать цвет».

[430] On the Marxist concept of leisure, see Chapter Three of this dissertation.

leisure, which included physical training, education, and political propaganda, intended to elucidate to people the meaning and purpose of their work (thus increasing their enthusiasm and productivity), passive leisure had provided them with a maximum recharge of physical energy. This program was realized, for instance, in Konstantin Mel'nikov's Green City (1930), a vacation town near Moscow, which he interpreted as a "sleeping sonata," a factory that would physically and mentally transform people through sleep. "No such thing as absolute rest exists," explained a Constructivist architect Kuz'min in 1930 on the pages of *Sovremennaia Arkhitektura*, "A person is constantly working (even when he is asleep)."[431]

The *Narkmofin* Residential Block and Unconscious Perception

Designed by young factory painters under the general supervision of the building's architect Konstantin Mel'nikov in 1930, the chromatic solution for the workers' club of Dulevo porcelain factory near Moscow guided visitors through the space, determining their physiological responses and nervous activity. Located at the entrance to the club was the transitory zone of the cloakroom, which discouraged lingering and stimulated the visitors to move forward quickly: its coloration avoided bright and light hues and was dominated by blue and brown. The visitors then moved to a foyer, a bright and spacious room, painted in orange and white, which instilled in them a mood of festivity. A second adjacent foyer in a grey-white scheme provided a rest for the eyes tired by this brightness. A staircase then led upwards, facilitating physical movement with a bright lemon-yellow. Upstairs, the library, reading rooms, and rooms for children were painted

[431] Arkhitektor Kuz'min [Architect Kuz'min], "Problema nauchnoi organizatsii byta" ["The problem of organization of everyday life"], *Sovremennaia Arkhitektura* [*Contemporary Architecture*] No. 3 (1930): 14-17 (14).

grey, green, and blue. Red and grey squares defined the Party Committee room downstairs; next to it, a smoking room was designed to divert rather than to attract people: the ochre and black squares of its walls meant to provoke sickness and disgust, providing a contrast to a fresh and hygienic gym, painted in orange, lemon, and white. Relying on cultural associations rather than medicinal research, here, color prescribed the visitors an activity and determined both its effectiveness and emotional assessment. Facilitating the flow of people within—as if the visitors were parts on a conveyor belt—the club aspired to transform morality and personality at an every step of the process.[432]

A different approach, rooted in a much more thorough body of physiological research, was offered by Stroikom and Maliarstroi, whose work focused on the analysis of physiological reactions to color and its combinations. Seemingly less ambitious than Dulevo club—not aspiring to transform the visitors' personalities—Maliarstroi's projects were concerned with improving the effectiveness of color perception and, through it, with economizing the energy of subjects. "From the colored discs of Féré [we have to move to] color screens (i.e. large surfaces of color) and from color screens—to their spatial combinations, enclosing [*zamykaiushchie*] the perceiving subject" wrote Ginzburg to explain his vision of wallpainting when discussing color schemes for the residential block of the Narkomfin, the Soviet ministry of finance, on Novinskii boulevard in Moscow.[433] The color schemes for the building were prepared by him together with and under the general supervision of Scheper shortly after the latter's arrival to the USSR. Famous among architectural historians today as "the social condenser," the Narkomfin was intended as a prototype building testing Stroikom's standardized solutions for residential

[432] Kostin, "Arkhitektura i tsvetopis'," 6.

[433] Ginzburg, "Tsvet v arkhitekture," 74.

architecture.[434] Experimenting with both the schemes of Stroikom and with the "perceiving subject" inhabiting them, the Narkomfin was, in a way, a double laboratory, in which psychological and engineering experiments existed on different, but interpenetrating planes.

Because daily activities in the Narkomfin housing project were functionally segregated, the purpose of residential cells was reduced to passive rest, during which the energy of a dweller had to be economized and restored.[435] Two opposite gamuts of color—the warm and the cold—were tested by Ginzburg and Scheper in the Narkomfin.[436] An axonometric drawing of an apartment of type K (a larger apartment for families with children), showed a large surface of a bright blue color on the ceiling and a light blue-grayish color on the internal partitioning walls. The columns and the external wall of the apartment were to be painted white, while the pendent stripes of the ceiling along the walls were to be black.[437] A more traditional central perspective drawing illustrated the warm palette that was applied to a small, studio-like F unit (an apartment for singles and childless couples).[438] The ceiling was painted in a dark yellow; the external wall was given a pale lemon-yellow color above the window and a white color below. The other walls

[434] The expression "social condenser" was introduced by Ginzburg to describe the mission of socialist housing. See Redaktsia [Editors], "Desiatiletiiu Oktiabria" ["To the Ten-Year [Anniversary of] the October], *Sovremennaia Arkhitektura* [*Contemporary Architecture*] No. 4-5 (1927): 111.

[435] Moisei Ginzburg, *Zhilishche. Opyt piatiletnei raboty nad problemoi zhilishcha* [*Residential Construction. An Experience of Five Years of Work on the Problem of Residential Construction*] (Moskva: Gosstroiizdat, 1934) 82-96.

[436] Both were published in the Maliarstroi journal *Maliarnoe Delo* [House-painting] ("Color supplement" to No. 3-4, 1930), while the original drawing is preserved at the Bauhaus-Archiv Berlin (Nachlaß Scheper).

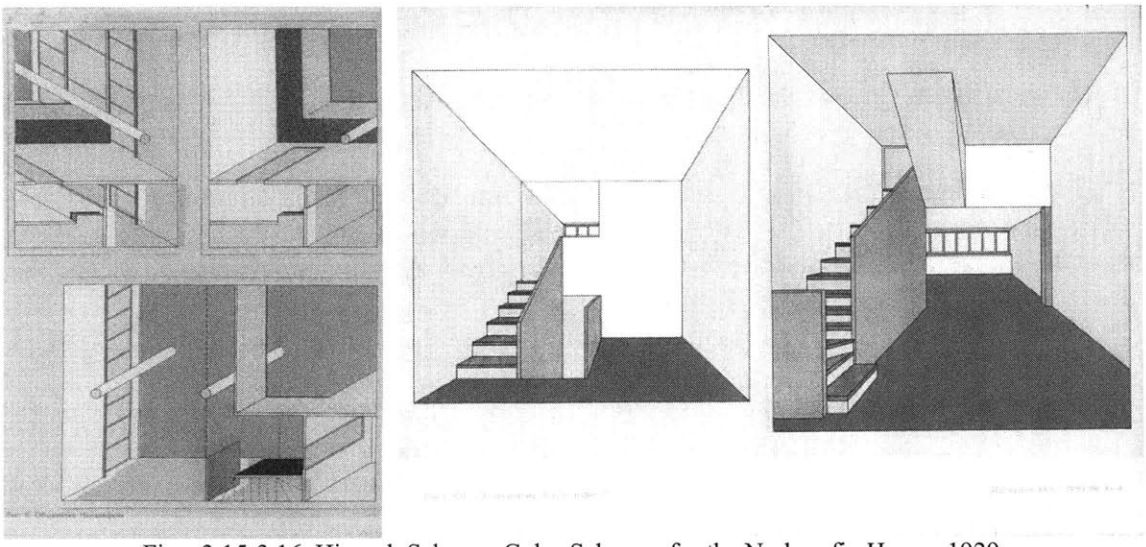
[437] In a typical manner of the Bauhaus House-Painting Workshop representation style, the drawing omits the floor as the least important of area of the application of color. More on the conventions of house-painting axonometry see: Erich Borchert, "Metody proektirovania maliarnykh rabot" ["Methods of the design of wallpainting works"], *Maliarnoe delo* [*Wallpainting*] No. 2, 1931: 48-51.

[438] The apartments of types F and K were elaborated by Ginzburg within a collective of Stroikom. See: *Tipovye proekty i konstruktsii zhilishchnogo stroitel'stva.*

were also painted subtle warm hues. In contrast, the screens enclosing the staircases leading up and down were given various shades of grey, which emphasized their position as planes in space.

These schemes presented a stark contrast with the palette of Ginzburg's earlier color plans, such as the MVTU laboratory or the Government Building in Alma-Ata (Kazakhstan), which was painted in bright yellow, blue, and red under the influence of Léger.[439] Indeed, the MVTU experiment was declared unsatisfactory, since although the colors did succeed in correcting the light and spatial conditions, it was noticed that their brightness exercised a tiring effect upon perceivers and destroyed the three-dimensionality of space. Now Ginzburg appeared to have learned from ergography and the theory of surface and film colors he publicized in *Sovremennaia Arkhitektura.* The light tones used in the Narkomfin building prevented nervous agitation and were thus more suitable for quiet rest. Moreover, the use of surface (light and matt) colors allowed Ginzburg to retain a Constructivist concern with *faktura* when covering the surface of the wall with a layer of paint to convey the spatial, properly architectural, properties of the wall—its distance from the viewer, size, and relationships with other planes—thus allowing the viewer to economize the energy of perception.

[439] See, *Sovremennaia Arkhitektura* [*Contemporary Architecture*] No.2 (1929): 59.



Figs. 3.15-3.16. Hinnerk Scheper. Color Schemes for the Narkomfin House, 1929.

Generally avoided in the interiors, bright colors could nevertheless be found in one area—on the ceilings. This was because, according to Ginzburg, the surface of ceilings "penetrated into the consciousness only in partial, intermittent [*otdel'nye, prepyvistye*] visual images."[440] Color, which otherwise would provoke a strong nervous agitation, should enter perception in small doses, similar to those prescribed by Borchert to nervous patients. The brief glances that one threw on a ceiling, in other words, were too short for the color to enter the cognitive sphere and thus make one tired. Unlike the bright ceilings, the walls, which constantly remained in one's field of vision, were given an "invisible coloration" [*nevidimaia rastsvetka*], which was nevertheless perceived by the subject without her consciously registering it: this was achieved by means of "extremely little-noticeable spatial-color shades of the same, almost monochrome, gamut." In an example suggested by Ginzburg—and indeed followed in the Narkomfin house— a room with a light-blue ceiling could have the walls of cold-white, pale-gray, or pale-yellow hues, while a greenish ceiling could be accompanied with mostly white,

[440] Ginzburg, *Zhilishche*, 94.

slightly greenish walls with a subtle shade of warm brown or cold-white tones. If a room painted according to one of these schemes were visited for a short period of time, Ginzburg continued, the color of the walls would remain almost unnoticeable and the room would seem white. However, if someone remained subject to the effect of the walls for a longer period of time, the color began "deeply, almost half-consciously and without noticeable visual irritations to penetrate into the sensation [*oshchushchenie*] of the living [subject], becoming not so much a factor of color as such, but a sort of purely spatial sensation."[441]

Ginzburg used the word "half-consciously" [*polusoznatel'no*] to describe the "non-visible… but sensible" [*nevidimaia, no oshchushchaemaia*] coloration that entered the mind of the subject that was unregistered by consciousness, betraying the architect's interest in the tradition of studying the basic, pre-cognitive strata of mind and attempting to communicate with these strata directly. It reflects the similar conviction of Borchert, who believed that every perception of color was unconscious and identical for humans and animals:

> People, animals, plants all experience the impact of color and light. This impact is usually manifested in this or that primitive reaction on a certain color environment, be it a green spring, a yellow-golden fall or a moon-bluish light. People mostly unconsciously perceive the impact of color light in a room, such as a lamp with a green shade in an office or a pink lamp in a bedroom; this is the same as the unconscious agitation of a bull or a turkey cock, when they see a red cloth in front of them. The impact of color upon a human body happens not only under the color influence of surrounding nature, but also under the influence of the color design of an internal space.[442]

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[441] Ginzburg, *Zhilishche,* 94-95.

[442] Borchert, "Krasochnoe oformlenie zhilishch," 8. Translation by the author. Russian original: «Люди, животные, растения испытывают на себе влияние света и цвета. Влияние это сказывается обычно в том или ином примитивном реагировании на различное цветовое окружение, будь это зеленая весна, желто-золотистая осень или голубовато-лунный свет. Люди большей частью бессознательно ощущают влияние цветного освещения в комнате, как например лампа с зеленым абажуром в рабочем кабинете или розовый фонарь в спальне; таково также бессознательное возбуждение быка или индюка, когда они видят перед собой

By referencing the psychological theory of the unconscious, Ginzburg (as well as Borchert) rooted their aesthetic choices in an objective scientific foundation, substantiating them in presumed evolutionary necessity, which regulated the deepest, biological responses of people to their environment. Conducted unconsciously inside the Narkomfin apartments was the activity of spatial perception. Having displaced the perception of wallpainting into the domain of the unconscious, the Maliarstroi program culminated in the dissolution of art that the Constructivists started several years earlier. Similarly to Productivist non-art (useful objects of everyday life), it rejected art and denied its subjects an experience of aesthetic or intellectual gratification in order to fulfill the imperative of usefulness: wallpainting hoped to help the dwellers to overcome a possible discomfort and save energy by unnoticeably affecting them through the psychological stimuli of colors.

The unnoticeable quality of the light, slightly off-white hues that Ginzburg and Scheper preferred emphasized the utter subordination of color to architecture, which used color to express its own spatial qualities. Asserting the status of architecture as a production of form and space, unlike the purely functionalist projects of Bauhaus architects, the house of the Narkomfin masked the making of this art. Indeed, the schemes of Scheper and Ginzburg strove to remain unseen and unappreciated by the viewer, who was to respond to them by understanding the spatial form and by having the accompanying physiological reaction of relaxation. The subject, not the building, was the real object of their architectural work. In a truly posthumanist gesture, Scheper and Ginzburg redefined their creative subjectivity as radically disjointed from that of the

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красную материю. Воздействие цвета на организм человека имеет место не только под цветовым влиянием окружающей природы, но также и под влиянием красочного разрешения того или иного помещения».

users, who were reduced to a conglomeration of psychophysiological sensations; as a result, they claimed a kind of power that they idealized as a scientific machine of effectiveness.

If the research of color fatigue informed the design of the Narkomfin's residential cells, schemes for its common spaces—corridors and staircases—were based on another branch of applied psychology: a study of signaling systems, which was also rooted in the imperative of economizing perceptual energy. Initially elaborated by Avenarius, the notion of the unconscious as an energy-saving alternative to an employment of intellect was later developed by the philosophical heirs of empiriocriticism, the members of the Viennese "Verein Ernst Mach," remembered in the history of philosophy as "third positivists." Aspiring to make empiricism and positivism the basis of a new, strictly non-metaphisical philosophy, the Viennese logical positivists Rudolf Carnap and Otto Neurath elaborated Avenarius's program of creating an economic language of philosophy. The program of a scientific, anti-metaphysical, and rational philosophy developed by the logical positivists paralleled to anti-humanist notion of architecture as organization then current at the Bauhaus, and both Carnap and Neurath, were among the guest lecturers on sociology, physics, and philosophy, whom Meyer invited to the Bauhaus during his directorship. Moreover, lectured on sociology and psychology of architecture in Moscow, applying their ideas to architectural theory.[443] It was also in Moscow that Meyer collaborated with Neurath, who expressed an interest in architecture and urban planning and who from 1931

[443] In a letter to Margareth Mengel from 28 October 1930, Meyer wrote: "heute ist meine ernennung zum professor vollzogen worden (schriftlich ich übernehme die sogenannte aspirantengruppe (20 mann), welche das studium vollendet hat und fertige architekten sind. Ausserdem trage ich vor über soziologie und psychologie in der architektur. das sind vorträge für das ganze haus. es sind mehr als 2000 studierende da" („Today I was appointed a professor (according to papers, I take the so-called group of doctoral students (20 people), who have already completed their studies and are trained architects. Moreover, I lecture on sociology and psychology in architecture. These are lectures for everyone. There are more than two thousand students there"). Unpublished manuscript. Getty Research Institute.

to 1934, working together with a graphic designer Gerd Arntz, participated in the creation of Moscow institute of statistics Izostat, which was to develop clear and efficient propaganda materials.[444] From 1928, Neurath had been developing his system of orientation, which later became known as ISOTYPE (International System of Typographic Picture Education) as a new international language.[445] Easily perceivable and not requiring any specific knowledge, Neurath's signs operated not on a conscious, but on an automatic level, conveying information in a simple and less energy-consuming way than required by a verbal sign. Drawing on Avenarius's vision of philosophy as classification, Neurath suggested presenting natural language as a hierarchy of general notions, which were moreover represented as visual images that reduced each notion to its several key features.

Yet Neurath's method of replacing words with simple images could be simplified even further. "Here is a golden rule: use colored pencils. With color, you accentuate, you classify, you clarify, you disentangle" argued Le Corbusier in 1938, speaking not about the creative design process, but the technical process of producing easily readable drafts and schemes.[446] Color coding allowed classifying, grouping objects together as if under a general notion or symbol, thereby saving intellectual energy. Moreover, color could be just as well applied to architecture

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[444] In 1923, Otto Neurath founded Siedlungsmuseum in Vienna, a new museum for housing and city planning. During the Austrian Civil War of 1934, Neurath had been working in Moscow, where he collaborated with with Meyer. See a letter from Hannes Meyer to Lotta Beese from 29 November 1931. Unpublished manuscript. Getty Research Institute.

[445] On ISOTYPE, see: Otto Neurath, *International picture language (*Reading: University of Reading, 1980); Otto Neurath, From hieroglyphics to Isotype: a visual autobiography (London: Hyphen Press, 2010); Nader Vossoughian, *Facts and Artifacts: Otto Neurath and the Social Science of Socialization.* Diss., Columbia University, 2004; Benjamin Benus, *Figurative Constructivism, Pictorial Statistics, and the Group of Progressive Artists, c. 1920-1939.* Diss.,University of Maryland, 2010.

[446] Wigley, *White Walls, Designer Dresses*, 205.

itself, making its users read the surface of architecture just as they would read a diagram or a map. In Germany, this approach led to an emergence of the so-called *Signaletik*, a system of architectural prompts that facilitated the orientation of people within a building. Developed in parallel to and in a dialog with pictographic representation, often by artists simultaneously engaged with typography, *Signaletik* relied on painting walls into contrasting colors in order to make them immediately distinguishable. Like a pictogram, it operated on an instinctive, physiological, automatic level, allowing for quick orientation in within complex spatial systems, such as the areas of circulation in public and educational buildings. Its earliest and most vocal proponent was the typographer, graphic designer and artist Max Burchartz, who in 1927 applied it in the *Hans Sachs Haus* in Gelsenkirchen in North Rhine-Westphalia—a large, multi-purpose structure that included offices, a concert hall, a hotel, and various stores—in order to facilitate the orientation of the visitors within this otherwise difficult-to-navigate environment. The same principles were also employed by Meyer in 1928-1930 the Federal School of the General German Trade Union Federation (ADGB) in Bernau (where the flow of people in the concourse was regulated by a system of signals reminiscent of those on a railway),[447] by Scheper in the Bauhaus building in Dessau (1925-1926), and, on a smaller scale, by Heinrich Koch in Oskar Schlemmer's house in Dessau (1925-1926), where doors of adjacent rooms were painted in contrasting colors.

[447] More on Meyer's ADGB project, see: Michael Hays, *Modernism and the Posthumanist subject: the Architecture of Hannes Meyer and Ludwig Hilberseimer* (Cambridge, MA: MIT Press, 1992) 135-143.

Ginzburg, who had seen the buildings of the Bauhaus during his visit to Germany in 1927, admitted the importance of the precedent upon his interest in house-painting.[448] When the construction of the Narkomfin residential block was began in 1928, he used the methods of *Signaletik* to diversify otherwise identical modernist environment and facilitate the orientation within it. In the color plan of the Narkomfin house that was developed under Scheper's direction the following year, in the areas of communal circulation—corridors and stairwells—color allowed for a quick grasp of the organization of space and an easy orientation among otherwise identical objects. Doors were painted either black or white to prevent the residents from confusing their apartments with those of their neighbors'; similarly the application of black to the horizontal and white to the vertical surfaces of steps prevented the residents from stumbling. Just as in the Bauhaus in Dessau, each level of the building received a distinctive color: orange, light blue, green, cobalt, vermillion (red), and Veronese green (emerald).[449] However, unlike the German examples, where *Signaletik* was used in large public buildings, in the Narkomfin it was applied to a residential block. Its use highlighted the functionalist redefinition of the house as a zone of rest, sleep, eating and circulation, de-individualizing the dwelling according to the late-Constructivist architectural principles.

[448] The date of Ginzburg's visit is given after Scheper, *Vom Bauhaus gepägt*, 58. For Ginzburg's account of the Bauhaus visit, see Ginzburg, "Tsvet v arkhitekture," 75-76.

[449] Ginzburg, "Tsvet v arkhitekture," 75.

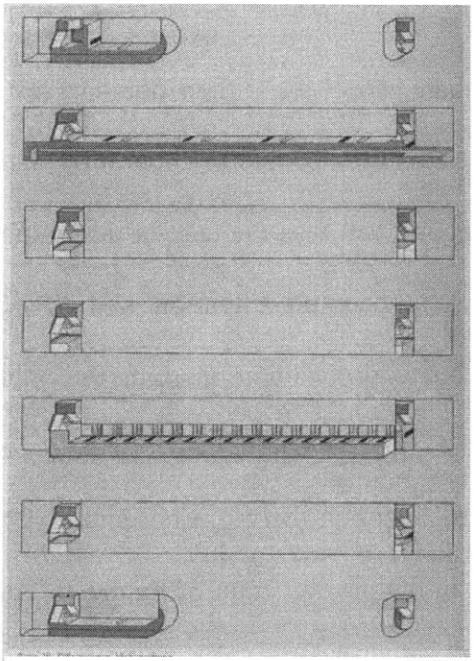

Fig.3.17. Hinnerk Scheper. The Narkomfin House. Circulation scheme, 1929.

Despite its promotion by Ginzburg, however, *Signaletik* in general was received with relatively little interest in Soviet Russia, and its application in Narkomfin remained an exception. Alongside ISOTYPE, whose method of concise visual representation of information was found unsatisfactory for propaganda, *Signaletik* was rejected as too logical and too mechanistic.[450] This lack of appreciation by Soviet architects and officials elucidated the difference between the German socialist and the Soviet projects of modernist architecture. The former following the model of an automobile moving within a complex system of lanes, junctions, and intersections, the latter,—as exemplified in the Dulevo workers' club—followed that of an object of mass production moving along a conveyor belt, passive and devoid of agency. Nevertheless, the aspiration of architects and designers to apply the principles of color coding in the USSR demonstrated the porousness of the boundaries between the two versions of the modern subject. Just as today's highways do, color coding helped to prevent subjects from looking around and exploring the possibilities of a given situation, making them take the single, prescribed route towards a goal that was always known in advance.

[450] It is absent, for instance, from Alekseev's books (such as Alekseev, Teplov, Shevarev, *Tsvet v arkhitekture*), which summarize all other approaches.

The Architecture of Attention

The house of the Narkomfin, the residential block where people spent their hours of rest, exploited the possibilities of unconscious perception in order to allow people to economize and recharge their perceptive energy. A seeming opposite of this program was the task of designing theaters, cinemas, lecture halls and auditoria—spaces, where people's attention had to be augmented and maximized. There, color served not to save, but to direct attention along the right route, to exclude unnecessary stimuli and guarantee the full psychological effect of a performance—an effect that had an ideological significance. Attention therefore bordered with the unconscious, a border that was most clearly manifested in the phenomenon of hypnosis. As Jonathan Crary has argued, "hypnosis also made clear that attentive states could be delineated in terms of absorption, dissociation, and suggestibility."[451] But as educational theorists during the 1920s debated the values of semi-hypnotic memorization as opposed to understanding in pedagogical process, so different and conflicting approaches to wallpainting and its goals determined auditoriums design in the USSR.[452]

A project for a theater interior designed by Georgii Kliunkov was based on a psychological law that postulated that chromatic intensification directed the gaze towards more saturated areas. An employee of the State Institute of Structures [*Gosudarstvennyi institut sooruzhenii*], where he studied the effects of light and color in architecture, in particular, in the architecture of clubs, theaters, and cinemas, Kliunkov was a former student of Ladovskii and the

[451] Jonathan Crary, *Suspensions of Perception. Attention, Spectacle, and Modern Culture* (Cambridge, MA: The MIT Press, 2000) 67.

[452] In the 1920s, progressive education, which prioritized understanding over memorization, conflicted with a educational culture based on memorization and (consequently) attention, which was as a clue to its success. This so-called associationism was supported by major American psychologists and educational theorists, such as, for instance, Edward Thorndike of Teachers' College at Columbia University.

son of one of the pedagogues of the VKhUTEMAS "Color" course Suprematist painter Ivan Kliun. In his standardized painting schemes for theaters and cinemas, which he publicized on the pages of *Maliarnoe Delo* in 1932, the younger Kliunkov expanded on Antokol'skii's physical direction of the subject to the ideological center of the city with an imaginary transplantation into another time and place. Color alone—without recurring to mimetic representation—transformed the theater into a heterotopia, a space of magic transformation of both reality and the subject.

Kliunkov's first entry into the problem of the design of auditoriums was a scheme of a standardized cinema hall. Here, the architect argued for the creation of a completely black room—"the walls, the floor, the ceiling, and, if possible, the furniture have to be all black" as this would create an "absolutely pure visual environment" that resembled a "visual tube that is covered from inside with a matted black color that neutralizes outside light beams and guarantees visual precision."[453] Kliunkov's cinema hall was both the ultimate literalization of Ginzburg's comparison between a polychromatic architectural environment and a psychological laboratory, and a replica of Ladovskii's real psychological laboratory at VKhUTEIN. Concentrating their attention on the gleaming white square of the screen, the spectators were cut off from all other sensations, forgetting their surroundings—the events of the day, the street they came from, the people sitting next to them—and submitting to the mesmerizing effect of the film. As a conceptual scheme, Kliunkov's black box established a standardized, identical, laboratory condition for perception by all, guaranteeing the repeatability of the experiment and eliminating the same possibility of chance and arbitrariness that was abhorred by Scheper and Le Corbusier.

[453] G[eorgii] Kliunkov, "Tsvetovoe oformlenie kinozala" ["Color design of a cinema hall"], *Maliarnoe Delo* [*Wallpainting*] No.3 (1932): 9.

The architecture of the hall plunged them into a state of dreaming, which, as the psychological research of the time had demonstrated, improved one's ability to follow and remember.[454]

In fact, Kliunkov's project destroyed the cinema hall in the same way as Scheper's "invisible" color scheme for the Narkomfin destroyed the aesthetic experience of the domestic interior, using architectural color as a psychological instrument rather than an artistic medium. But where the Narkomfin used color in order to create a spatial sensation, Kliunkov's cinema hall, just as Ginzburg's and Scheper's Narkomfin project, denied the viewer spatial experience, not only dematerializing architecture and transforming it into a psychological sensation, but eliminating any architectural perception and interpreting the hall as a machine of disjunction that separated the subject from all material or psychological (that is, for the positivist, all existent) phenomena and thus transplanting her into the imaginary reality of the film.

The phantasmagorical experience offered by Kliunkov's project denies the seeming contraction between it and Benjamin's conviction that cinema is a form of art perceived in a state of distraction. Painting, according to Benjamin, absorbes the viewer, who concentrates fully on his personal associations—in other words, it invites a cognitive reception; a constant change of scenes in cinema, on the other hand, prevents concentration, making contemplation impossible.[455] This unconscious mode of reception of cinema noticed by Benjamin is, in fact, similar to the state of absolute concentration that Kliunkov aspired to create; in the words of

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[454] Sleep-learning, or hypnopædia, was explored by Soviet (as well as Western) psychologists during the first half of the twentieth century. See, in particular Abram M. Sviadoshch, *Vospriiatie rechi vo vremia estestvennogo sna* [*A perception of speech during natural sleep*]. Diss., Leningrad, 1940. See also R. L. Sabsovich, *Gipnoz v meditsine, iurisprudentsii i pedagogike* [*Hypnosis in Medicine, Law, and Pedagogy*] (Rostov-na-Donu, 1910); V. M. Bekhterev, *Vnushenie i vospitanie* [*Suggestion and Education*] (St. Petersburg, 1912, repr. 1923).

[455] Benjamin, "The Work of Art in the Age of Mechanical Reproduction," 240-242.

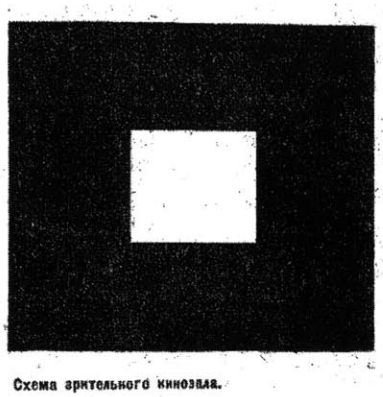


Схема зрительного кинозала.

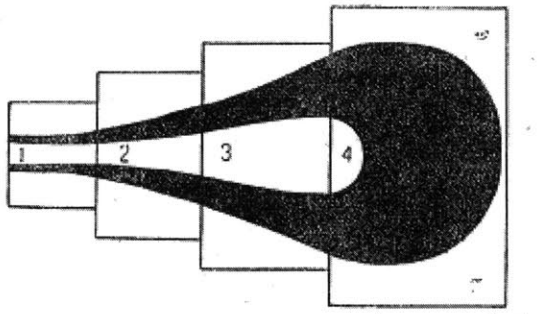


Рис. 1. Схема сгущения элемента темного (свет и цвет) по графику движения толпы. 1—вестибюль, 2—лестница, 3—фойе, 4—зрительный зал

Fig.3.18. Georgii Kliunkov. Scheme of a cinema hall [left].
Fig.3.19. Georgii Kliunkov. Scheme of a condensation of the element of the dark (color and light) according to a graphic of the crowd's movement. 1. Entrance hall. 2. Staircase. 3. Foyer. 4. Auditorium. [right].

Crary, "attention and distraction cannot be thought outside of a continuum in which the two ceaselessly flow into one another, as part of a social field in which the same imperatives and forces incite one and the other."[456] Watching Hollywood movies, Benjamin's distracted viewers attended exuberantly decorated theaters (think, for instance, of Grauman's 1922 Egyptian Theatre, or of the Grauman's 1926 Chinese Theatre, both in Hollywood), while Kliunkov's black box was designed for education and propaganda films. Instead of creating an architecture of fantasy, it confined the phantasmagorical experience of the visitor to the film itself, creating a mode of attentive perception no less unconscious than the distraction produced by Hollywood.

However perfect in its sterility Kliunkov's black box was, it became obvious that a rapid transposition of the viewer from the nervous intensification of the street to laboratory conditions (and then back to the street) would subject the viewer to a shock and thus provoke fatigue. Kliunkov therefore concretized and complicated his idea in a new plan for a theater, in which he incorporated the auditorium into a broader architectural and even urban scheme. In an article

[456] Crary, *Suspensions of Perception*, 51.

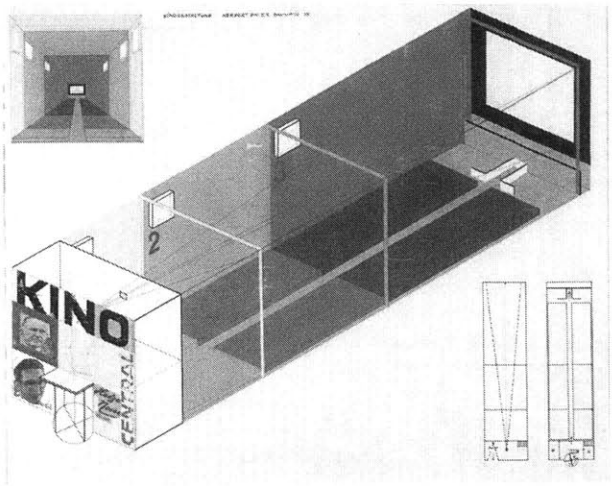


Fig.3.20.Herbert Bayer, Design for a cinema, 1924-1925.

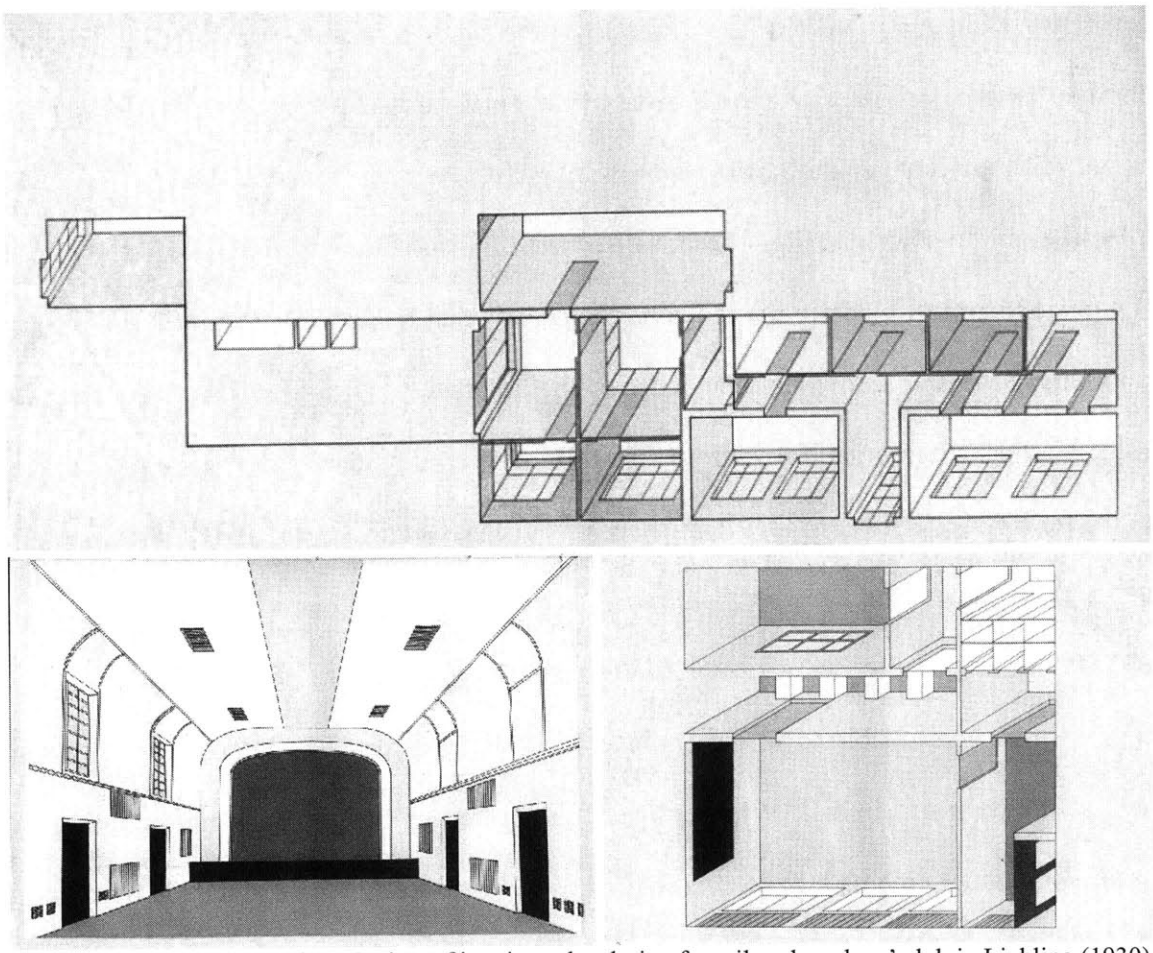
devoted to the use of color in theater design, Kliunkov offered a scheme for directing the viewers towards the auditorium while progressively intensifying their attention. In this plan, color gradually became more and more saturated as the viewer moved from the entrance towards the stage, while its luminosity gradually decreased. This careful orchestration of transitions allowed for the avoidance of excessive visual stimuli and thus the fatigue of the eye, which would have decreased the intensity of attention paid to the performance. In the entrance lobby, Kliunkov suggested using yellow (absorbing 65% of the light), as the color most connected with the hues of the street and best suited for a light and spacious room. Next a staircase or a corridor was painted violet, absorbing 77% of light—the color connecting yellow to the green tones that dominated in the foyer. The dark green color there, which absorbed 85% of light in turn mediated between the entrance lobby and the theater auditorium, which was painted in a dark red—the color complementary to dark green and thus balanced with it through an afterimage effect. As the auditorium lamps dimmed, the dark red would slowly turn to black, gradually switching the attention of the viewer towards the stage.[457]

Designed several years later, Kliunkov's theater project is reminiscent of a design for a cinema (1924-1925) by Herbert Bayer, a graduate of the Bauhaus Wallpainting Workshop, where he studied under Kandinsky. A long and narrow hall that was entered directly from the

[457] Kliunkov, "Tsvetovoe oformlenie kinozala," 9; G[eogrii] Kliunkov, "Tsvetovoe oformlenie teatra" ["Color design of a theater"], *Maliarnoe Delo* [*Wallpainting*] No.7 (1932): 4-5.

street, Bayer's cinema protected its visitors from the shock of spatial transition by dividing the walls into three color zones: a shorter zone at the entrance was painted yellow, followed by a zone of mediating orange, and finally, approaching the screen, the longest segment was of bright red. Parallel to the color division of the walls, the color of the floor moved from light grey near the entrance to almost black in the red zone. It is likely that Kliunkov was familiar with Bayer's idea through Scheper or Borchert, and consciously modified it in his theater and cinema projects. By dissociating the chromatic row from an achromatic one, Kliunkov segregated the transition from the bustle of the street to the ritual space of the cinema and the process of watching a film, creating different environments for the physical and the imaginary journeys. Although in Bayer's project colors helped the eye to adapt to the new environment and to focus attention on the screen, visitors were unable to forget entirely about the everyday life outside, which remained present at the back of the hall. Where Bayer's project was a functionalist interpretation of the *Existenzminimum* of cinema architecture, Kliunkov's theater design radicalized the psychological effect at the expense of potential scope and cost.

While Hollywood, Bayer, and Kliunkov all conceived the cinema or theater hall as a space of ritual, a more mundane interpretation of a stage was offered by Erich Borchert in his project for the workers' club in Liublino (1930). It was, in fact, an immediate chromatic reversal—the negative image—of Kliunkov cinema hall. Here the walls of the auditorium were painted in warm pale colors, which did not distract the viewer from stage while allowing an appreciation of the architecture of the space. As in Scheper's project for the Narkomfin building, in Borchert's club, color served primarily to accentuate the spatial properties of the room. Painted blue, the scene looked further away, emphasizing the hall's horizontality, while the warm light-brown accents around the stage created an effect of a tunnel. The whiteness of the



Figs. 3.21-3.23. Erich Borchert. Project of interior color design for railroad workers' club in Liublino (1930).

ceiling provided the dominant color theme, conveying the values of transparency and hygiene. The light tones of the interior guaranteed that even under a dim light the hall never became completely dark. Although the stage was not as forcefully connected with the audience as it was, for instance, in the experimental theater of Vsevolod Meyerhold,[458] it shared the space with the auditorium and appeared as its continuation, not unlike the way in which the choir of a Gothic cathedral continued the space of the nave.

[458] The actors at the experimental theater of Vsevolod Meierkhol'd (Meyergold, 1874-1940) often descended the stage to move between the spectators, directly addressing and engaging them.

Partially desacralizing theater performance, Borchert's scheme was closer to ideas of the period about the design of schools and other spaces of learning than to those about the design of a spectacle. By bringing light into a theater, Borchert connected it with the everyday, helping people to tie what they learn to their immediate experience. Similarly Ender in 1935 planned to work with physiologists from the Institute of Experimental Medicine and the Academy of Architecture on plans for a standardized school construction[459]: he suggested that schools should be devoid of ornament, which distracted attention and impeded studies, as well as of white and bright colors, which were too disturbing. Instead, Ender proposed painting school rooms in warm hues mixed with grey and ground tones, which would help the pupils concentrate on their work, while providing a light and hygienic environment.[460]

In a Marxist society, indeed, education and spectacle were treated as interconnected elements of leisure: any entertainment for the workers had to be used for the purpose of their enlightenment.[461] By entirely subjugating the visitor to the mystical power of the spectacle, Kliunkov's designs facilitated learning as hypnotic memorization and thus developed the intentions of both Borchert's and Bayer's projects. Driving the idea of economizing energy to its extreme by making learning unconscious, these designs completely freed the subjects from thinking operations, transforming them into perceptive machines.

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[459] Larisa Zhadova, "B. V. Ender o tsvete i tsvetovoi srede" ["B. V. Ender on color and color environment"], *Tekhnicheskaia Estetika* [*Technical Aesthetics*] No. 11 (1974): 6.

[460] Ender wrote: "Ornaments on the walls and bright colors in front of eyes impede studies. White also impedes: it blinds and exhausts a person. Superfluous light can be dimmed with color toning, while moving somewhat stronger colors to the ceiling. It is recommended to use warm hues, but not pure ones, but rather mixed with grey, mostly earth-toned." Boris Ender, "Printsipy otdelki pomeshchenia" ["Principles of interior design"]. Unpublished manuscript. RGALI.

[461] More on the Soviet Marxist notion of leisure, see Chapter Three of this dissertation.

Conclusion

Reiterated in the 1950s, an anecdote related to Lisstizky's involvement with the program of re-painting Moscow, depicted Lissitzky, hungry and desperate, with a wallpainting roller in his hands, manually painting houses alongside other workers.[462] Yet as this chapter has argued, the real tasks of wallpainting were in fact much more ambitious: rather than putting layers of paint on city facades, wallpainting—alongside other architectural and artistic disciplines—aspired to transform human consciousness and behavior. The new Soviet subject that it aimed to produce was energetic, motivated, rational, quick to learn, and economical. The subject envisioned was, moreover, standardized and thus capable of consuming the standardized production that a large industry could offer. By managing its working energy prudently and efficiently, it became both an ideal agent and an ideal material for the building of an industrialized society during the First Five-Year Plan.

[462] The anecdote was recounted by Lissitzky's friend, German avant-garde artist and film-maker Hans Richter. Hans Richter, *Köpfe Und Hinterköpfe*. Zürich Verlag der Arche, 1967, 184. See also Peter Nisbet, "El Lissitzky circa 1935: Two propaganda Projects Reconsidered," *Situating El Lissitzky: Vitebsk, Berlin, Moscow,* ed. Nancy Perloff and Brian Reed (Los Angeles, CA: Getty Research Institute, 2003) 211-234 (211-112).

CHAPTER THREE

EVOKING CREATIVE ENERGY: THE MOSCOW CENTRAL PARK OF CULTURE AND LEISURE AND OBJECTS-ORGANIZERS (1928-1935)

> Mobilization of the creative forces of the working class for the socialist construction—this is the main task of the park.[463]
>
> Betti Glan

"Comrades, we have long had to oppose harmful and alien petty theories that proclaim that one can simply stroll—stroll in general. We finally have to ponder over this strolling-creative process, which some vulgarizers debase under the word 'stroll.'"[464] Thus, on a beautiful summer day in 1932, started yet another speech at one of the numerous lengthy and ardent meetings that took place in the Moscow Park of Culture and Leisure, in a small cardboard pavilion with tightly closed windows, full of people and cigarette smog. The speech, as well as the meeting, was imaginary: it appeared in a short story "Recreating Unit" [*Veseliashchaiasia*

[463] *Park Kul'tury i Otdykha* [Park of Culture and Leisure], No.1, 12 August 1931. Slogan on page 3.

[464] Il'ia Il'f and Evgenii Petrov, "Veseliashchaiasia edinitsa" ["Recreating Unit"], *Pravda* [*The Truth*], No. 312, 12 November 1932. Reprinted in: Il'ia Il'f and Evgenii Petrov, *Sobranie sochnenii v chetyrekh tomakh* [*Collection of works in four volumes*]. Vol. 3. Moskva: Sovetskii pisatel', 1939. Web. 2.5.2014. <http://journ.elsu.ru/read008.html>. Translation by the author. Russian original: «Товарищи, давно уже пора дать отпор вредным и чуждым теорийкам о том, что гулять можно просто так, вообще. Надо наконец осмыслить этот гулятельно-созидательный процесс, который некоторыми вульгаризаторами опошляется названием прогулки».

edinitsa] published by the stars of Soviet satire Il'ia Il'f and Evgenii Petrov in the major Soviet newspaper *Pravda*. Parroting the style of minutes of Soviet official meetings, which were frequently intercepted with audiences' guffaws, Il'f and Petrov made their audience laugh at the idea of a "simple," purposeless stroll: "Simply strolling are cows (laugh), dogs (loud laugh), cats (the entire hall laughs)."[465] Indeed, as prols in Orwells's *1984*, only non-thinking animals could enjoy the freedom of purposeless strolling. Humans, on the contrary, could not afford such a waste of time and energy—they had to give their stroll a productive purpose. "And this [human] unit must, comrades, not just stroll, but, comrades, it must conduct a giant strolling work. (A voice from the audience: 'Correct!')."[466] To do so one of the discussants, comrade Burnilla,[467] suggested that they "load the back of every human-walking with an artistically produced poster on a theme of current importance—such as a friendsofchildren or stateinsurance."[468] The speaker, however, critiqued the idea's impracticality: "But, comrades, how does one insure that human-units are always focused on the posters and that the posters' effect is, so to speak, continuous and hundred-percent? Comrade Burnilla did not consider this, he did not notice the

[465] Il'f and Petrov. Translation by the author. Russian original: «Просто так, вообще, гуляют коровы (смех), собаки (громкий смех), кошки (смех всего зала)».

[466] Il'f and Petrov. Translation by the author. Russian original: «И эта единица должна, товарищи, не гулять, а, товарищи, должна проводить огромную прогулочную работу. (Голос с места: "Правильно!") ».

[467] Russian, *Gorillo*: a pun on words *gorilla* (gorilla) and *goret'* (to burn).

[468] Il'f and Petrov. Translation by the author. Russian original: «навесить на спину каждого человеко-гуляющего художественно выполненный плакат на какую-нибудь актуальную тему — другдитевскую или госстраховскую».

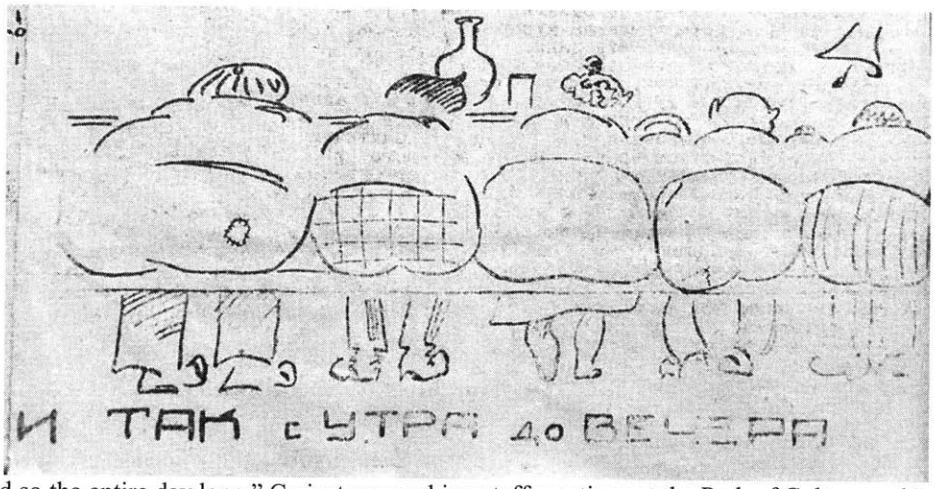

Fig.4.1. "And so the entire day long." Caricature mocking staff meetings at the Park of Culture and Leisure, 1929.

elephant. (Laugh)."[469] To fix this problem, the speaker suggested that the strolling units move in a single file, facing each others' backs—"then some poster will necessarily be in front of each walker's eyes." For the entire duration of the stroll, the worker would be absorbing an important truth, such as "While you are strolling here your apartment might be burning. Hurry up, insure your mobile property in *Gosstrakh*."[470]

The park ridiculed by Il'f and Petrov, the Moscow Central Park of Culture and Leisure [*Tsentral'nyi Park Kul'tury i Otdykha*, TsPKiO], was opened in Moscow in August of 1928. In 1931, it was named after Maxim Gorky, and has since then been frequently referred to as Gorky Park. The first projects allocated for it an enormous territory that stretched on both sides of the Moscow river. On the low Khamovniki bank and on the other, the high bank of Vorob'evy Hills where the Stalinist sky-scraper of Moscow State University now stands, and where foundational

[469] Il'f and Petrov. Translation by the author. Russian original: «Но, товарищи, как сделать так, чтобы человеко-единицы ни на минуту не упускали из виду плакатов и чтобы действие таковых было, так сказать, непрерывным и стопроцентным. Этого товарищ Горилло не учел, слона-то он и не приметил. (Смех)».

[470] Il'f and Petrov. Translation by the author. Russian original: «Пока ты здесь гуляешь, у тебя, может быть, горит квартира. Скорей застрахуй свое движимое имущество в Госстрахе». *Gosstrakh* [from *gosudarstvennoe strakhovanie,* state insurance], the name of Soviet state insurance company.

stones had previously been laid for two major symbolic projects of their times: Christ the Savior Cathedral by Karl Magnus (Aleksandr) Vitberg (1817) and the International Red Stadium by Nikolai Ladovskii (1926)—neither of which were completed. Never developed on the proposed scale, the park, especially during its early years, parasitized on the remains of the 1923 All-Russian Agricultural Exposition in Khamovniki, whose territory was incorporated as its core. And yet Gorky Park was to play an important role in Soviet culture—if not as an architectural attraction, then as a center of conceptual thought and theorization. Employing multiple architects, theater directors, and cultural and education specialists, it functioned as a research institute devoted to developing modern methods of landscape design, which were later replicated throughout the country.

Most remarkable about Il'f and Petrov feuilleton was not even the sarcasm with which they condemned the methods of the park's organization, but the truthfulness of their satire: the fear of a vainly lost moment, of an unproductive waste of resources, the desire to capitalize on every aspect of a subject's existence that were characteristic of a modernist state were, indeed, vividly present in the park, and especially in architectural and conceptual projects for its design, most of which eventually proved to be too ambitious even for the Stalinist state. Moreover, Il'f and Petrov aptly pointed to the vexing problem faced by the directorship and other contributors to the park's concept: "how does one insure that human-units are always focused on the posters and that the posters' effect is, so to speak, continuous and hundred-percent?" In other words, simply imposing state ideology on its subjects was not enough to make them interiorize this ideology. First of all, the subjects had to *notice* it. Thus, the problem faced by the park as a model propaganda endeavor was not one of disobedience or sabotage—it was the one of attention.

Jonathan Crary has observed that since the late nineteenth century "perception functions in a way that ensures a subject is productive, manageable, and predictable, and is able to be socially integrated and adaptive," since it was realized precisely at this moment that "attention had limits beyond and below which productivity and social cohesion were threatened."[471] The importance of attention as an adaptative mechanism was noticed by Charles Darwin, who believed that "hardly any faculty is more important for the intellectual progress of man than the power of attention. Animals clearly manifest this power, as when a cat watches a hole and prepares to spring on its prey. Wild animals sometimes become so absorbed when thus engaged, that they may be easily approached."[472] For Darwin, as well as for many nineteenth-century thinkers, attention was "a *reflex* process, part of a mechanical adaption of an organism to environmental stimuli. Important here is the evolutionary legacy of attention, and its origins in *involuntary* and instinctive perceptual processes."[473] Crary distinguished another major paradigm of thinking that at this time implied that attention is "determined by the operations of various *automatic* or unconscious processes or forces, a position articulated in many ways, beginning with Schopenhauer, Janet, Freud, and numerous others."[474] Attention and will were, as Crary demonstrates, far from synonymous, and attention was frequently thought of as subjected to external manipulation that remained unregistered by consciousness.

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[471] Jonathan Crary, *Suspensions of Perception: Attention, Spectacle, and Modern Culture* (Cambridge, Mass: MIT Press, 1999) 4. Crary's emphasis.

[472] Charles Darwin, *The Descent of Man, and Selection in Relation to Sex* [1871] (Princeton, NJ: Princeton University Press, 1981) 44. Quoted in Crary, *Suspensions of Perception,* 40-41.

[473] Crary, *Suspensions of Perception*, 42.

[474] Crary, *Suspensions of Perception*, 42.

As this chapter will demonstrate, the paramount significance of attention for ideology and the potential for its tacit manipulation by psychological and physiological means were well-known and exploited in Gorky Park. In what follows, I will explore how TsPKiO as an experimental prototype form of ideological urban space inconspicuously worked with the visitors' attention, searching for ways of compelling people to choose certain routes and directions, find their ways to different areas of the park, enter certain pavilions, attend performances, scrutinize the content of exhibitions, and—most importantly—receive a charge of enthusiasm, energy and excitement about their work and its significance for the commonly built society. Since this chapter focuses on the unconscious and the non-verbal, it will avoid a critique of ideological messages conveyed by the park: the content of performances and exhibitions, for instance, will remain bracketed in the analysis. Instead, I will focus on the techniques and methods used in the park to control the unconscious, emotional and bodily attitudes towards these messages. Devised by artists, architects, psychologists and cultural thinkers (Konstantin Mel'nikov, El Lissitzky, and the Stenberg brothers, to name just a few avant-garde luminaries who occupied key positions in the Park) who often acted from radically left artistic and political platforms, these techniques were far from the simple "return to Classicism" or "return to realism" that are often associated with the cultural politics of the First Five-Year Plan. On the contrary, as this chapter will demonstrate, they continued the line of "avant-garde" aesthetic thought—the line that stemmed from Anatolii Lunacharskii's fascination with empiriocriticism, his idea of economy of energy, his revolutionary romanticism and his ideal of active and creative personality.

Praising the variety theater, Filippo Tommaso Marinetti once remarked that its crucial achievement for modernist culture lay in the creation of a new—engaged, active, singing along

and otherwise participating in the performance—type of spectator, who stood in stark contrast to the "static" "stupid-voyeur" of a traditional theater.[475] The goal of activating the spectator (or, in this case, the visitor) likewise became the priority of the Park of Culture and Leisure, whose theoreticians believed that only fully engaged visitors could sincerely participate in the park's ideological program. Furthermore, initiated by Aleksandr Bogdanov, the discourse of organization as a rationalization of activity had become ubiquitous in Soviet modernist culture, penetrating into the discussions about the park's program. Visitors' activity in Gorky Park had to be organized, that is, given a correct direction and coordinated with the activities of the others. The problem of attention was thus reformulated as an organization of the activity of the masses, and as such formed the core of TsPKiO's artistic and architectural program, expressed in such concepts as "organized masses" [*organizovannye massy*], "activation of visitors" [*aktivatsia posetitelei*], and "organized mass-ness" [*organizovannaia massovost'*].

At the same time, this organization of perception had to happen unnoticeably for the subjects, who were left to believe in their own willful choice of objects of their interest. This allowed for the economization their perceptual energy in a double way. First, by replacing thought with the automatic, the subject achieved the desired result free of its energetic charge (as described in detail in Chapter One).[476] Second, as will be discussed in this chapter, non-logical, visual means of persuasion were thought to be more effective for a mass audience, and therefore similarly contributed to saving its intellectual energy. Making this organization of attention

[475] Filippo Tommaso Marinetti, "The Variety Theater 1913," *Futurist Manifestos,* ed. Umbro Apollonio (New York: Viking Press, 1973) 127. Quoted in Tom Gunning, "The Cinema of Attraction: Early Film, Its Spectator and the Avant-Garde," *Early Cinema: Space, Frame, Narrative,* ed. Thomas Elsaesser (London: B.F.I., 1990) 66.

[476] See Dmitrii Ovsianiko-Kulikovskii, "Vvedenie v nenapisannuiu knigu po psikhologii umstvennogo tvorchestva (nauchno-filosofskogo i khudozhestvennogo)." Published in: N. V. Os'makov, *Psikhologicheskoe napravleneie v russkom literaturovedenii* (Moskva: Prosveschenie, 1981) 109-121.

unnoticeable was largely achieved through the manipulation of the environment and through material objects that circulated or were located in the park. Objects became major agents of the park's work and the major preoccupation of its theoreticians. Activators and organizers, these objects overcame the passivity and alienation of their producers, which, according to Marxist theorists, was an avoidable consequence of capitalism, and acted as comrades and co-workers, as true participants in the country's social life. Moreover, unlike people, objects could remain on the fringes of one's consciousness, acquiring the power to shape actively visitors' psychic and emotional attitudes without being noticed. It is this great yet underestimated transformative power of objects in an expanded sense that is the focus of this chapter.

Collectivism

Unlike the visitor of a capitalist park, who sought individual entertainment, the subject of a park of culture and leisure—as well as the that of Soviet culture of the 1920s-early 1930s in general—was a collective. While its conceptual elaboration in the works of Bogdanov, Lunacharskii, and Gorky proved to be especially important for Soviet culture, collective subjectivity was a result of a longer development in historical and social thought. During the nineteenth century, the Romantic concept of history, the driving force of which was a powerful, heroic individual—typically a general, monarch, or other leader—gradually receded, surrendering to an idealist notion of impersonal historic forces. A follower of Hegel's dialectic, Marx based his social theory on a conception of history as having an inevitable course that was guaranteed by historical laws, an agent of which was the progressive class of each social formation. No outstanding qualities could turn a person into history's agent: only social reality,

to which people were subordinated people, could unite them in a mass that collectively realized historic progress.[477] Unleashed during the French revolution, the Paris Commune, and later the Russian October Revolution, this new collective force, the masses, acting as one and becoming stronger than any individual, frightened, intrigued, and fascinated nineteenth- and early-twentieth-century thinkers. Sociology became one the of the most dynamic and promising sciences of the age, but the other young sciences of human personality, psychology and anthropology, also made attempts to understand the phenomenon of the power of the masses. Sociologist Émile Durkheim developed the notion of collective consciousness, social psychologist Gustave Le Bon—that of "collective soul," anthropologist Lucien Lévy-Bruhl that of "collective representation," and Carl Gustav Jung explored the "collective unconscious."

Most early European studies of collective behavior shared an underlying fear of a crowd, which was understood as a criminal mass prone to aggression and pointless destruction. Indeed, the beginnings of social psychology can be dated back to the work of Italian criminologist Scipio Sighele, who in 1891 published *La folla delinquente: studio di psicologia collettiva* [*Delinquent Crowd: a Study of Collective Psychology*]—a book that summarized his research on crimes committed by the crowd (in such instances as panics, riots, and demonstrations). For Sighele, the most vicious quality of the crowd, was its utter uncontrollability: not only was the state unable to restrict its actions, but even the members of the crowd themselves lost the capacity for self-control. Sighele argued that these crimes should be classified as those of affect, that is, irrational and uncontrollable by individual consciousness or morals. Since the criminologist believed that

[477] Lev Tolstoy's merciless portrait of the epitome of a Romantic hero, Napoleon, and his juxtaposition to the Russian marshal Kutuzov, who renounces his ego and follows the will of people and history, on the pages of *War and Peace* serves a vivid example of a dismantlement of a Romantic idea of a historic hero.

participating individuals acted unconsciously, they could not be held accountable for their actions. Introducing the concept that would later be called "irresistible impulse" in English-language criminal law, Sighele succeeded in creating the first precedent of its legal usage by introducing it into the laws of Italy. The book immediately acquired international popularity. Translated into French as *La Foule criminelle*, it exerted a particular effect on sociologists Gustav Le Bon and Gabriel Tarde.[478]

If for Sighele, a crowd consisted of déclassé, marginalized individuals, rejected by society and possessing natural propensity for crime, Le Bon offered another explanation of crowd crimes: it was the state of crowd-ness itself, rather than the moral defects of people that constituted the crowd, that made its behavior irrational. Le Bon suggested that the human psyche consisted of two layers: the upper, conscious one, represented by the intellect and morals, and the lower, unconscious layer, represented by instincts, habits, beliefs, and sympathies. The first explained individual differences between people; the second—reminding of Hartmann's identification of the unconsiocus with a biological species—was responsible for what they had in common, producing the foundation of various collective identities (whether raceal, religious or political). When people assembled in groups, the conscious, individual parts of psyche were driven away by the lower collective, irrational side. Having lost its consciousness, the crowd, although consisting mostly of males, exhibited psychological qualities that Le Bon classified as feminine: exaggerated emotionality, thinking in images (as opposed to conceptual reasoning), the polarity of feelings (ascribing to all phenomena either a positive or negative value), credulity, and collective hallucinations (illusions and fantasies). As a result, the crowd could not be

[478] A Russian translation of the book appeared in 1896 (S. Sigele [Sighele], *Prestupnaia tolpa. Opyt kollektivnoi psikhologii* [*Delinquent Crowd: a Study of Collective Psychology*] (Sankt-Peterburg: Izd-vo F. Pavlenkova, 1896).

persuaded by logical reasoning, but rather by vivid images and other psychological stimuli. It needed its heroes (leaders) and enemies, as well as its sacral centers. As if drunk on the sensation of almightiness that the crowd gave, an individual consumed by the crowd lost his usual prudence and sense of responsibility and could commit both heroic and criminal deeds that he never would have performed in another situation. Moreover, in a crowd, a person was subject to psychic "contagion": extreme suggestivity explained by a semi-hypnotic state induced by the presence of other people. This hypnotic effect, for Le Bon, was immediate but lasting, provoking a person to behave in a certain way long after he had left the crowd.[479]

Unlike Le Bon, Tarde suggested drawing a distinction between natural and artificial crowds (*la foule naturelle* and *la foule artificielle*). The former, for Tarde, were formed spontaneously and dissolved just as easily but the latter—such as religious sects or political parties—were characterized by discipline and organization. An artificial crowd was held together by a high degree of imitative instinct that its members exhibited by constantly imitating each other and their leader. Due to this law of imitation, artificial masses could remain organized even if they were physically dispersed, manipulated not through suggestion or contagion, but through conformism.[480]

The works of both Le Bon and Tarde were translated into Russian shortly after their original publication.[481] Tarde's work on analyzing the psyche of a crowd impressed the Russian

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[479] Gustav Le Bon, *Psychologie des Foules* (Paris: Alcan, 1895), translated into English as *The Crowd: A Study of the Popular Mind* (1896).

[480] Gabriel Tarde, *Les lois de l'imitation* (Paris: Kimé Éditeur, 1890).

[481] Le Bon's *La Psychologie des Foules* (1895) was translated in 1896, reaching the peak of its popularity in the 1920s; his *Les Lois Psychologiques de l'Évolution des Peuples* (1894)—in 1906; *Psychologie du Socialisme* (1898)—in 1899; *Psychologie de l'éducation* (1902)—in 1910, *L'Évolution de la Matière* (1905)—in 1909.

imperial court so much that it honored the scholar with the prestigious order of St. Vladimir. Although Tarde, Le Bon and other social psychologists were rarely cited by social-democratic authors (such as Lenin, Stalin or Lunacharskii), they were most likely familiar to these political and cultural leaders who focused their program on enhancing and exploiting the power of crowds. The philosophy of collectivism, developed by Lunacharskii alongside Aleksandr Bogdanov and Maxim Gorky, was particularly informed by the scholarship of the French psychologists of the crowd. However, returning to Hartmann's Darwinism, the left Russian thinkers reversed the French school's ethical assessment of the crowd. As will be shown below, for them, the crowd's irrationality was not a source of illusions and irresponsible behavior, but a mechanism that could allow people to overcome narrow individualism and elevate their spirits to contribute to the common good—the good of the human species.

Three close friends and collaborators who shared similarly radical Bolshevik platform, Lunacharskii; his brother-in-law, the founder of powerful *Proletarian Culture* [Russian, *Proletkul't*] movement of the early 1920s Aleksandr Bogdanov; and writer Maxim Gorky, were frequently referred to by contemporaries as "Millenarian Bolsheviks" and "Nietzschean Marxists."[482] The latter sobriquet elucidated those aspects of the group's platform that were

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Preceding its English translation by more than ten years, Tard's *Les lois de l'imitation* (1890) was published in Russian in 1892; his *L'art et la logique* (1891)—in 1895; the Russian edition of his *La logique sociale* (1895) came out in 1901; *L'opinion et la foule* (1901) followed in 1903; and *Les lois sociales. Esquisse d'une sociologie* (1898)—in 1906; this list of Russian translations of Le Bon and Tarde is far from complete. For their reception in Russia, see Part 1 of N. I. Semechkin, *Sotsial'naia psikhologia na rubezhe vekov: istoria, teoria, issledovania* [*Social psychology at the turn of the century: history, theory, research*] (Vladivostok: Izdatel'stvo Dal'nevostochnogo Universiteta, 2001) 5.

[482] George L. Kline, "'Nietzschean Marxism' in Russia," *Demythologizing Marxism: A Series of Studies on Marxism,* ed. by Frederick J. Adelmann (Chestnut Hill: Boston College, 1969) 166-83; Rosenthal, Bernice Glatzer, *New Myth, New World: from Nietzsche to Stalinism* (University Park, PA: Pennsylvania State University Press, 2002).

especially important for the young Soviet culture, yet ignored by more orthodox Marxists: the extolling of power, will and creativity, and the attention to ethical and aesthetic issues. Hartmann connected Schopenhauer's individual will with a collective unconscious, and the left Bolsheviks sublated Nietzsche's extreme individualism into its dialectical opposite, which they termed "collectivism." Collectivism's programmatic publication, a collection *Ocherki filosofii kollektivizma* [*Essays in the Philosophy of Collectivism*] appeared in 1909.

In 1900, Bogdanov and Lunacharkii were exiled to Vologda, in the north of central Russia. There, the intellectual atmosphere among the exiled leftist intelligentsia was more philosophical than practical. In Vologda, they met Lunacharskii's old Kiev schoolmate, philosopher Nikolai Berdyaev (1874-1948), who was also involved with Marxism and exiled. The meeting was crucial for the newcomers. By that time, Berdyaev had abandoned Marxism and started elaborating his idealistic, proto-existentialist philosophy of freedom, having gathered a significant group of followers. Although Bogdanov and Lunacharskii quickly established themselves as the leaders of an alternative, anti-idealist circle, the framework of the discourse was already set up. In the words of a contemporary historian, "Though they supplied different answers, the two Marxists accepted as valid the questions that the idealists asked."[483] In an article "What is Idealism?" (1901) Bogdanov went as far as defending the value of idealism as such, distinguishing within it between the progressive "evolutionism" and the fallacy of "idolism." [484] The notion of idealism, for him, was used "where the feelings, aspirations and actions of people are directed more socially, where the psychic activity is developed towards

[483] Dawid G. Rowley, *Millinarian Bolshevism: Empiriomonism, God-Building, Proletarian Culture*. Diss. University of Michigan, 1982, 38.

[484] Aleksandr Bogdanov, "Chto takoe idealism?" ["What is idealism?"], *Obrazovanie* [*Education*] No.12 (1901). Reprinted in: Aleksandr Bogdanov, *Iz psikhologii obschestva* [*From the psychology of society*] (Sankt-Peterbug: Pallada, 1906) 10-37.

greater socialization."[485] It was based on notions of progress ("the increase in fullness and harmony of conscious human life") and the ideal ("the reflection of socially progressive tendency in an idealistic psyche").[486] A truly progressive society never ceased its development: Bogdanov abhorred Edward Bellamy's society "frozen in satisfaction and self-satisfaction, quietly resting on the laurels of previous generations' victories over social and external nature."[487] Therefore, the best, most progressive ideal was the one that became a springboard for the next developmental move.[488] Bogdanov's evolutionism became the method for evaluating the attainability of these ideals—as opposed to idolism, which refused to pose this question.[489]

Evolutionism became the principle behind Lunachskii's *Osnovy pozitivnoi estetiki* [*Foundations of positive aesthetics*, 1903], a declared attempt to build a system of empiriocriticist aesthetics.[490] Applying Avenarius's *Prinzip des kleinsten Kraftmaßes* to aesthetic thought, Lunacharskii argued that everything that increases the amount of energy ("affectional" [*affektsional*]) in an organism was aesthetic, while everything that decreased it was "anti-aesthetic." Moreover, while Avenarius referred to cognitive energy expended during the perceptive process, Lunacharskii radicalized the hidden evolutionism of energetist discourse,

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[485] Bogdanov, "Chto takoe idealism?", 17-18. Translation by the author. Russian original: «характеристика "идеализм", применяется там, где чувства, стремления, действия людей направляются более социально, где психическая активность развивается в сторону большей социализации».

[486] Bogdanov, "Chto takoe idealism?", 35. Translation by the author. Russian original: «Прогресс означает возрастание полноты и гармонии сознательной человеческой жизни,... прогрессивный идеал есть отражение общественно-прогрессивной тенденции в идеалистической психике».

[487] Bogdanov, "Chto takoe idealism?", 22. Translation by the author. Russian original: «застывшее в довольстве и самодовольстве, безмятежно почивающее на лаврах после одержанных предыдущими поколениями побед над природой социальной и внешней».

[488] Bogdanov, "Chto takoe idealism?", 23.

[489] Bogdanov, "Chto takoe idealism?", 36.

[490] Anatolii Lunacharskii, "Osnovy positivnoi estetiki" ["Foundations of positive aesthetics"], *Ocherki realisticheskogo mirovozzrenia* [*Essays in realist worldview*] (St. Peterburg: Izdatel'stvo S. Dorovatovskogo i A. Charushnikova, 1903) 114-182. Reprinted as a book in 1923.

speaking about "vital energy." Lunacharskii's work continued the tradition of a highly influential nineteenth-century Russian radical aesthetic thinker Nikolai Chernyshevskii (1828-1889), whose 1855 dissertation, written from a standpoint of Compte's first positivism, "Esteticheskie otnosheniia iskusstva k deistvitel'nosti" ["Aesthetic relations of art to reality"], argued that "the beautiful is life."[491] Similarly, life became the ultimate category of Lunacharskii's aesthetic system and the only aesthetic criterion: beauty was, ultimately, the "mighty and free life" itself.[492] Pleasure experienced in the process of multiplication of vital energy, for Lunacharsky, was the criterion not only for aesthetic, but also for ethic judgments: the only objective basis upon which an animal identified something as good or bad was its personal sensation of agreeable or disagreeable, that is, pleasant or unpleasant.[493] For Lunacharsky, ethics, aesthetics and epistemology ultimately coincided, as the good, beautiful and true were defined in the same term, as that which furthered life.[494]

Lunacharskii's exaltation of energy, force and mightiness, Bogdanov's crypto-idealism, and Berdiaev's philosophy of freedom and creativity all betrayed an indebtedness to philosopher who at first glance might seem an exact opposite to collectivist communist project—Friedrich Nietzsche. At the turn of the twentieth century, the influence of Nietzsche on Russian culture—especially in the realms of aesthetics and religious philosophy—was profound, and is well-explored in contemporary scholarship.[495] In "Meschanstvo i individualizm" ["Philistinism and

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[491] Russian original: «Прекрасное есть жизнь». Nikolai Chernyshevskii, "Esteticheskie otnosheniia iskusstva k deistvitel'nosti" ["Aesthetic relationships of art to reality"], Chernyshevskii, *Sochinenia v 2kh tt.* [*Works in two vols.*]. Vol.1 (Moskva: Mysl', 1986) 76.

[492] Lunacharskii, "Osnovy positivnoi estetiki," 51.

[493] Rowley, 68.

[494] Lunacharskii, "Osnovy positivnoi estetiki," 38-39.

[495] See: Ann M. Lane, "Nietzsche in Russian Thought, 1890-1917." Diss. University of Wisconsin-Madison, 1976; *Nietzsche in Russia*, ed. Bernice Glatzer Rosenthal (Princeton, N.J.: Princeton University Press, 1986), especially

individualism"] (his contribution to *Ocherki filosofii kollektivizma* [*Essays in the Philosophy of Collectivism*]) Lunacharskii went as far as to substitute the Marxist category of bourgeoisie with the Nietzschean notion of *Pöbel*, philistines (Russian *meschanstvo*), which he defined as a combination of individual greediness and collective cowardice. It was this ethical and aesthetic category of philistinism that, for Lunacharkii, entailed individualism. In the same collection, Gorky elaborated on this idea by introducing the notion of *poshlost'* as a quintessential feature of the philistines. Untranslatable, yet highly important for Russian culture, this word is aesthetically charged, referring to all forms of bad taste, from pornography to insufficiently or ostentatiously sophisticated poetry.[496] Although it already existed in the Russian language in the early nineteenth century signifying the pettiness of everyday life, it was only after the breakthrough of Nietzsche into Russian culture that *poshlost'* was reinterpreted as the opposite of spiritual aristocratism and connected with the category of matter—and it is clearly in this sense it is used by Gorky.

> Philistinism is the damnation of the world; it devours personality from within, as worm empties a fruit; philistinism is a thistle; its evil and ceaseless quiet rustling dies in the ringing of mighty bells of beauty and the vivacious truth of life. Philistinism is a

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articles: Mary Louise Loe, "Gorky and Nietzsche: The Quest for a Russian Superman" (pp. 251-274), A. L. Tait, "Lunacharsky: 'A Nietzschean Marxist?'" (pp. 275-292), and Zenovia Sochor, "A. A. Bogdanov: In Search of Cultural Liberation" (pp. 293-314); Clowes, Edith W., *The Revolution of Moral Consciousness : Nietzsche in Russian literature, 1890-1914* (DeKalb, Ill.: Northern Illinois University Press, 1988); Bernice Glatzer Rosenthal, ed., *Nietzsche and Soviet Culture: Ally and Adversary* (Cambridge ; New York: Cambridge University Press, 1994); Bernice Glatzer Rosenthal, *New Myth, New World: from Nietzsche to Stalinism* (University Park, PA: Pennsylvania State University Press, 2002); *Vladimir Solov'ev und Friedrich Nietzsche: eine deutsch-russische kulturelle Jahrhundertbilanz* (Frankfurt am Main and New York: Lang, 2003); Nel Grillaert, *What the God-Seekers Found in Nietzsche: the Reception of Nietzsche's Übermensch by the philosophers of the Russian Religious Renaissance* (Amsterdam and New York: Rodopi, 2008).

[496] Svetlana Boym defines *poshlost'* as "the Russian version of banality, with a characteristic national flavoring of metaphysics and high morality, and a peculiar conjunction of the sexual and the spiritual. This one word encompasses triviality, vulgarity, sexual promiscuity, and a lack of spirituality." Svetlana Boym, *Common Places: Mythologies of Everyday Life in Russia* (Harvard University Press, 1994) 41.

Fig. 4.2. "*Übermensch*—this [word] sounds proudly!" A commentary by contemporary Russian artist Tovariscch U on Gorky's famous phrase "Chelovek—eto zvuchit gordo!" ("'Man'—this [word] sounds proudly!").

bottomless, greedy mire of filth, which sucks genius, love, poetry, thought, science and art into its sticky depths. Philistinism is the vile revenge of dead matter on the living creative spirit of man.[497]

The alternative to a philistine that Gorky suggested to the world was nicknamed by the critics of the day Überhobo [Überbosiak] or Übertramp [Überbrodiaga].[498] Like his aristocratic Nietzschean uncle, *Überhobo* was creative and independent, strong and healthy both physically and morally. He possessed a superhuman willpower and a great spiritual energy that allowed him to achieve any of the ambitious goals he set. This energy empowered him to transcend the physical boundaries established by nature: in fact, a constant overcoming of these boundaries was the most characteristic feature of *Überhobo.*

However, unlike the Nietzschean *Übermensch,* the *Überhobo* of Gorky, Lunacharskii and Bogdanov was not egoistic or ready to sacrifice others for his own pleasure and power. On the

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[497] Maxim Gorky, "Razruschenie lichnosti" ["The destruction of personality"], *Ocherki po filosofii kollektivizma,* 353-403 (402). Translation by the author. Russian original: «Мещанство—проклятие мира; оно пожирает личность изнутри, как червь опустошает плод; мещанство—чертополох; в шелесте его, злом и непрерывном, неслышно угасает звон мощных колоколов красоты и бодрой правды жизни. Оно бездонно-жадная трясина грязи, которая засасывает в липкую глубину свою гения, любовь, поэзию, мысль, науку и искусство. Мещанство—гнусная месть мертвой материи живому творческому духу человека».

[498] N. M. Minsky, "Filosophia toski i zhazhda voli" ["Philosophy of anguish and the thirst for freedom"], *Kriticheskie stat'i o proizvedeniakh Maksima Gor'kogo* [*Critical articles on the works of Maxim Gorky*], S. Grinberg, ed. (St. Petersburg, 1901) 21. See also Mary Louise Loe, "Gorky and Nietzsche: The Quest for a Russian Superman," Bernice Glatzer Rosenthal, ed., *Nietzsche in Russia* (Princeton, N.J.: Princeton University Press, 1986) 251-274.

contrary, *Überhobo* was governed by altruism, or "species' instincts" [*vidovye instinkty*].[499] Not unlike as Le Bon, who divided psyche into a "conscious" and a "collective" layer, Gorky believed that, higher than always-egoistic reason, such biological instincts as patriotism, maternal instinct and other "gregarious instincts" [*stadnye instinkty*] allowed for the regulation of communal life on a superhuman level, promoting the interests of the community and, ultimately, of human species.[500] For the Collectivists, the ultimate biological agent of the struggle for life was not an individual or even a group, but the whole of humanity. To emphasize this biological universality of his notion of the collective, Lunacharskii suggested speaking about "the human species," repeating the Spenserian/Machist idea of culture and intellect as a form of evolutionary adaptation and Hartmann's idea of the unconscious (here, subconscious) as the "biological truth":

> The human, having developed especially high individual forms of adaptation (the organs of thought) and having created a culture that, in the end, acquired this extremely individualistic character (philistinism, private property), to a large degree eclipsed in his own consciousness and distorted in his life practice that which in the biological world, in the world of "big reason" ["bolshogo razuma"] has the primary significance: the life of the species as the main phenomenon, the life of an individual as an accident, as an expression of the particular. The growth of species **self-consciousness** is a great process of a return of reason to biological subconscious truth. Of course, here we are dealing not with a self-rejection of individuality, not with its return to the slavery of species instincts, but with a harmonic union, with high vitalist aesthetics, which will teach individuality to appreciate the development of might, beauty and happiness of species as a whole above all else, and which will at the same time teach the truth that precisely this mighty, beautiful and happy species, which develops in constant struggle for a new might, is expressed in its most beautiful individuals.[501]

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[499] Lunacharskii, *Osnovy pozitivnoi estetiki*, 25.

[500] Lunacharskii, *Osnovy pozitivnoi estetiki*, 25.

[501] Anatolii Lunacharsky, "Meschanstvo i individualizm" ["Philistinism and individualism"], *Ocherki filosofii kollektivizma* [*Essays in the philosophy of collectivism*] (Sankt-Peterburg: Izdanie tovarischestva "Znanie," 1909) 219-350 (335). Lunacharskii's emphasis. Translation by the author. Russian original: «Человек, развив особенно высокие формы приспособления индивидуального характера (органы мысли) и создав культуру,

In Bogdanov's novel *Krasnaia zvezda* [*The Red Star*, 1908], which describes a communist society built on Mars, the Martians continued to expand their numbers despite being conscious that they all but exhausted the natural resources of their planet. When an earthly visitor wonders whether a policy of birth-control would be reasonable to implement, the Martians retort that limiting their fertility would mean surrending to the blind forces of nature. Instead, the Martians embark into an exploration and conquest of other planets.

> Reduce fertility rates? But this would give the victory to the elements. This would mean the repudiation of the unlimited growth of life, its inevitable stop at one of the nearest steps. We win when we attack. If we put an end to the increase of our army, this would mean that we are besieged by the elements. Then faith will start withering, the faith in our collective force, in our great communal life. And with this faith, the meaning of every individual life will be lost, because in each of us—small cells of the great organism—lives the whole, and each of us lives through this whole. No, decreasing fertility would be our last option; and when this happens beyond our will, this will be the beginning of end.[502]

The ultimate physical boundary that the move from an individual to a collective biological subject transgressed was human mortality—and eschatological questions, indeed, played a major role in the works of the Russian Nietzscheans. This was true both for the Collectivists and for their opponent Berdyaev, who claimed that true creativity can evolve only

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принявшую, в конце концов, такой крайне индивидуалистический характер (мещанство, частная собственность), затмил в значительной степени и в собственном сознании исказил в своей жизненной практике то, что в мире биологическом, в мире "большого разума," имеет главный смысл: жизнь вида, как основное явление, жизнь особи, как акциденция, как частное выражение. Рост **видового самосознания** есть великий процесс возвращения сознания к биологической подсознательной истине. Конечно, дело здесь пойдет не о самоотречении личности, не о возвращении к рабству ее по отношению к видовым инстинктам, но о гармоническом слиянии, о высокой эстетике жизни, которая научит личность выше всего ценить развитие мощи, красоты и счастья вида, как целого и научит вместе с тем той истине, что именно такой мощный, красивый и счастливый, в постоянной борьбе за новую мощь развертывающийся вид и выражается в самых прекрасных особях». Lunacharskii's emphasis.

[502] Aleksandr Bogdanov, "Red Star," *Red Star: The First Bolshevik Utopia*, Loren R. Graham, Richard Stites, and Charles Rougle, eds. (Bloomington: Indiana Univ. Press, 1984).

at the face of imminent death since only the products of spirit could withstand it.[503] When removed from the *Proletkul't* politics and subsequently from university teaching in 1926, Bogdanov founded the Blood Transfusion Institute in Moscow, where he planned to find a remedy that would save people from aging and death.[504] Although according to Bogdanov's wife, several experiments with blood transfusion to which he subjected himself made him look and feel much younger, the research came to a tragic end when Bogdanov died after exchanging blood with a student who had suffered from both malaria and tuberculosis.

Having overcome death, the *Überhobo* became the God. By the time of Gorky and Lunacharsky, the concept of a deified human was not a new idea in Russia: the term *chelovekobog* [man-god] had already been introduced in 1847 by a left radical Nikolai Speshnev.[505] Playing with term *bogochelovek* [god-man], a traditional Orthodox designation of Jesus Christ, Speshnev suggested replacing Christianity with a new religion of anthropotheism.[506] But it was Fedor Dostoevsky, a member of the same radical Petrashevskii circle as Speshnev, who popularized the concept among a much broader audience in *Besy* [*The Demons*, 1872] and *Brat'ia Karamazovy* [*The Brothers Karamazov*, 1880] before Nietzsche's *Also sprach Zarathustra* [*Thus Spoke Zarathustra*], which was written in 1883-1885. Kirillov,

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[503] Likewise, Russian philosophy of "cosmism" paid much attention to the question of death and afterlife: Nikolai F. Fedorov (1829-1903) developed a theory of physical resuscitation of the death, while the inventor and forerunner of cosmonautics Konstantin E. Tsiolkovskii (1857-1935) believed that the humanity is destined to conquer the universe, spreading life on other planets.

[504] The institute still exists today as the Hematologic Research Center of the Russian Ministry of Health.

[505] See Nel Grillaert, *What the God-seekers found in Nietzsche: the reception of Neitzche's Übermensch by the philosophers of the Russian religious renaissance* (Amsterdam; New York: Rodopi, 2008) 109-112.

[506] Speshnev, Nikolai Aleksandrovich [1847], "Pis'ma k K. E. Khoetskomu" ["Letters to K. E. Khoetskii"], *Filosofskie i obschestvenno-politicheskie proizvedeniia Petrashevtsev* [*Philosophic and social-political works of petrashevtsy*], V. E. Evgrafov, ed. (Moskva: Gospolitizdat, 1953) 477-502.

the protagonist of *The Demons*, wanted to show that the way to become a god is to overcome the fear of death:

> Then there will be a new life, a new human, everything will be new... then they will divide history into two parts: from the gorilla to the annihilation of God, and from the annihilation of God... to the transformation of the earth and of man physically. The human will be god, and will be physically transformed. And the world will be transformed, and things will be transformed, and thoughts and all feelings.[507]

Drawing on Dostoevsky, Russian religious philosophers of the "Silver age" (at the turn of the twentieth century) developed their notion of *bogoiskatel'stvo* [god-seeking]. As Berdyaev argued in "Russkie bogoiskateli" ["Russian God-Seekers," 1907], god-seeking went through the most of the nineteenth-century Russian philosophy and literature, reflecting the irrationality and transcendentalism of the Russian soul and its tragic spirit, which was "rebellious and hostile to everything philistine."[508] If more Orthodox god-seekers (Florenskii, Bulgakov) were building their theories upon the teachings of the Church Fathers, the modernizers (Merezhkovskii, Berdyaev, Rozanov, Shestov) attempted to enrich Christianity with the ideas of Schopenhauer, Nietzsche, and Kierkegaard. For Merezhkovskii, all previous Christian tradition had been predicated on the dualism of flesh and spirit, whereas Dostoevsky's god-man, *chelovekobog,* and Nietzsche's *Übermensch* (Merezhkovskii openly identified the two) showed the way to a new synthesis.

Attracted as they were to the ideas of overcoming the dualism of flesh and spirit and of deifying the human, socially oriented Collectivists such as Gorky and Lunacharskii found the

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[507] Fedor Dostoevskii, *Polnoe Sobranie Sochinenii v 30ti tt.* [*Full collection of writings in 30 vols.*], Vol. 10 (Leningrad: Nauka, 1972) 94; Quoted in Grillaert, 121.

[508] Nikolai Berdiaev, "Russkie bogoiskateli" [„Russian god-seekers"], *Dukhovnyi krizis intelligentsii. Stat'i po obschestvennoi i religioznoi psikhologii (1907-1909)* [*Spritual crisis of intelligentsia. Articles on social and religious psychology*] (St. Peterburg: Tipografiia tovarischestva "Obschestvennaia pol'za," 1910) 27-38 (29).

individualism of god-seekers problematic. In their philosophy of god-building [*bogostroitel'stvo*], they enriched god-seeking with Marxism, socializing the former and spiritualizing the latter. God cannot be found, claimed the God-builders, but can rather be built by a collective effort of people. As only the collective subject can gain immortality and thus become a true subject of history, not the individual, but the collective is the locus of divine spirit and energy. Distancing themselves from *narodniki* (literally, peopleists; the socialist movement that, in the second half of the nineteenth century, exalted the virtues of the peasant population of Russia), the God-builders deified humanity biologically. "Yes, of the whole working people of the earth, of all its strength—the one and eternal source of the creation of God. Soon the will of the people will awake, and that great force, divided, will unite. Many are already seeking the means by which all the powers of the earth shall be harmonized into one, and from which shall be created the holy and beautiful all-embracing God of the earth,"[509] writes Gorky through the mouth of an old holy-fool Juna, who teaches Matvei, the protagonist of his novel *Ispoved'* (*Confession*, 1908) the path from God-seeking to God-building. The novel ends with a mystical scene of healing a paralyzed girl by the collective power of the people, united in the spiritual ecstasy of their religious procession.

> There was great excitement. They pushed the wagon, and the head of the young girl rocked to and fro, helpless and without strength. Her large eyes gazed out with fear. Tens of eyes poured their rays out upon her; hundreds of force streams crossed themselves over her weak body, calling her to life with an imperious desire to see her rise from her bed. ...
>
> "Rise, dear one, rise. Lift your arms. Be not afraid. Arise, arise without fear. Sick one, arise; dear one, lift your arms."
>
> Hundreds of stars arose in her soul and a pink shadow lit up her death-like face, and her surprised and happy eyes opened still wider. Her shoulders moved slowly and humbly

[509] Maxim Gorky, *The Confession*. Trans. Rose Strunsky (New York: Frederick A. Stokes Company, 1916) 210.

she raised her trembling arms and obediently held them up. Her mouth was open like a fledgling's about to leave its nest for the first time. A deep sigh rose around her. As though the earth were a copper bell, struck upon by a giant Sviatogor with all his strength, the people trembled, and laughing cried…

"Walk!" the people cried. "Walk!" …

The recovered girl walked quietly among us. Confidently she pressed her revived body against the body of the people…[510]

The deification of the collective by the God-builders not only elevated the collective to the status of a transcendental, all-mighty, and super-human entity—a phenomenon described by Le Bon yet condemned as illusory—but also reduced God to a function of evolution, making Him parallel to Hartmann's *das Überbewusste* and Freud's *Über-ich.* Bogdanov and Lunacharskii's reading of evolutionarism explains their transition from empiriocriticism with its ideals of scientific rigor to a quasi-religious concept of God-building. Evolution was the truly dynamic, transcendental and fundamental principle behind all human being, while science, philosophy, art and religion were but some of the possible mechanisms of the human species' evolutionary adaptation. Forming the subject of evolutionary process, it was the collective that created the symbolic forms and that they ultimately had to address. The collective's life, propagation, and expansion was, in the end, their sole purpose.

Organized Masses

The revolution brought not only a promise of new social order, but also a hope that the new subject—the collective as man-god—would soon appear. However, unlike the one portrayed in Gorky's *Confession*, the new Soviet collective subject did not emerge spontaneously, and

[510] Gorky, *The Confession*, 288-290.

according to the former God-builders, especially to Lunacharskii, its birth required help and mediation. In Tarde's terms, natural crowd needed to be organized in order to transform into an artificial one. The latter received a new name—the collective—and a new, positive, ethical assessment. As the agent of socialist society, only the collective had the power to resist the remnants of the old order and to fight successfully for its survival against the dangers that emerged both from within and from without.

While notion of the "collective" had been present in Russian political and cultural discourse since the nineteenth century, the expression "organized masses" gained a primary importance in Soviet discourse of art, architecture and politics towards the end of the 1920s, when it became evident that the socialist revolution was not a consequence but rather the reason for the emergence of the new subjectivity, without which its achievements could not last long. The notions of organization and masses were already important in collectivism, which was based on the idea of conscious and responsible organization of collective work and life. Thus, Aleksandr Bogdanov's tectology, or "universal organization science"—the social theory based on the principle of organization—claimed to operate with ideas and other products of the human mind, which, in distinction to the disinterested philosophy, it used as a tool for the planning and structuring of practical activity.[511] First of all, organizational laws were to be applied to human collectives—society and its various groups. Distinguishing a collective from a crowd or mass, organization, according to Bogdanov, gave the collective power over the forces of history and nature, allowing for a more economical and efficient distribution of energy and time:

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[511] Aleksandr Bogdanov, *Vseobshchaia organizatsionnaia nauka (tektologia)* [*General organizational science (tectology)*].Vol.1 (Sankt-Peterburg: M. I. Semenov, 1913), Vol. 2 (Moskva: Kn-vo pisatelei v Moskve, 1917). Web. 2.6.2014. <http://www.litmir.net/br/?b=89656>.

> Let the muscle strength of each worker be allowed to lift and move a rock that weighs no more than 5 poods. Two can, of course, cope with a rock that weighs less than 10 poods, because forces cannot be combined without loss, that is, without hindering each other: this sum will always be less than a result of simple addition; for instance, it equals 9 poods. But in this case, for one worker a rock of 8 poods would be either an obstacle that is absolutely impossible [to overcome], one that forces him to change the method of work, that is, to spend a significant excessive amount of energy and to waste time, for example by cutting the rock with a hammer or creating a lever to move it. A coordination of the force of the two workers eliminates the unavoidability and necessity of changing methods.[512]

According to Bogdanov, organization was for a collective the way of economy: the economy of energy, resources and time. This idea was, of course, not new for Marxism and actively used by other social-democrats from Chernyshevskii onwards,[513] receiving a new importance with the announcement of the First Five-Year Plan. It was, for instance, at the center of Stalin's 1930 article "Organization of the Masses" ["Organizatsia mass"], in which he equated the "organization" of the masses with their mobilization for the construction of an industrial economy.[514] The Stalinist collectivization of agricultural activity in 1930-1933 took place under similar banners. In 1934, Nikolai Berdiaev, by then a Russian émigré in France, argued that the masses entered the historical arena in times of crisis; these masses were "obsessed with organization," which explained their propensity for dictatorship. Although dangerous, their

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[512] Bogdanov, *Tektologia.* Pood [*pud*] is an old Russian measure of weight that equals 16.38 kilograms (36.11 pounds). Translation by the author. Russian original: «Пусть мускульная сила каждого работника в отдельности позволяет ему поднять и перетащить камень весом в 5 пудов, но не больше. Двое могут справиться с камнем, конечно, не в 10 пудов, а меньше, потому что комбинировать усилия нельзя без потери, т. е. без некоторой взаимной помехи: эта сумма всегда окажется меньше, чем результат простого сложения; допустим, она равна 9 пудам. В таком случае камень в 8 пудов для одного работника представляет сопротивление либо вообще непреодолимое, либо вынуждающее к изменению метода работы, значит, во всяком случае к значительной лишней затрате энергии и потере времени, например на раскалывание камня молотом или на устройство рычага для его передвижения. Координация сил двух работников устраняет непреодолимость или надобность в изменении методов».

[513] See Chernyshevskii, *Chto delat'?* [What is to be done?] (1867), multiple editions.

[514] Iosif Stalin, "Organizatsia mass" ["The organization of the masses"], *Pravda* [*The Truth*], 1 July 1930. Web. 2.6.2014. <http://rt-online.ru/archive_old/279/10079212>.

organizations were unavoidable as they confronted the "segregated, individualistic, isolated life of capitalist societies, in which *homo homini lupus est*, in which everyone thinks only about himself."[515]

According to the former collectivists who gathered around Lunacharskii and the Narkompros, as a means of converting a crowd into a collective, organization was the evolutionary mission and social task of a true proletarian art. As early as 1920, Lunacharkii defined "organized masses" as the collective subject of the new art. Speaking of the mass processions that were to become the major genre of revolutionary art, a genre whose ultimate product was the new transindividual subject that emerged in the act of a collective participation in an activity, Lunacharskii's revived the logics of Gorky's *Confession*:

> In order for the masses to make themselves felt, they must outwardly manifest themselves, and this is possible only when, to use Robespierre's phrase, **they are their own spectacle**. If **organized masses** march to music, sing in unison or perform some extensive gymnastic manoeuvres or dances, in other words, organize a kind of parade, then those other, unorganized masses clustering round on all sides of the streets and squares where the festival takes place, will merge with the organized masses, and thus, one can say: the whole **people manifests its soul to itself.**[516]

Out of separate individuals, there emerged one supra-human subject, the people [narod]. This transindividual subject was far from being a heterogeneous crowd: on the contrary, in it, individuals, acting in a full concordance with each other, were transformed into organs of the

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[515] Nikolai Berdiaev, *Sud'ba cheloveka v sovremennom mire. K ponimaniiu nashei epokhi.* Paris: YMCA-Press, 1934 [*The Fate of a Human in Contemporary World. To an Understanding of Our Epoque*]. Web. 2.5.2014. <http://krotov.info/library/02_b/berdyaev/1934_32_01.html>.

[516] Aleksandr Lunacharskii, "O narodnykh prazdnenstvakh" ["On popular celebrations"], *Vestnik teatra* [*Theater courier*] No.62 (1920). Reprinted at *Lunacharskii o massovykh prazdenstvakh, estrade, tsirke* [*Lunacharskii on mass celebrations, variety, circus*] (Moskva: Iskusstvo, 1981) 84-89 (85). Partial English translation: "On popular festivals," *Street Art of the Revolution. Festivals and Celebrations in Russia, 1918-1933*. Eds. Vladimir Tolstoy, Irina Bibikova, Catherine Cooke (The Vendome Press, 1990) 124. Lunacharskii's emphasis.

same collective body. Moreover, the new subject possessed its own soul (the festival, according to Lunacharskii, allowed the entire people to "manifest its soul to itself" [*ves' narod demonstriruet sam pered soboi svoiu dushu*]). This soul, like the unconscious species logic of Hartmann and other Darwinist aesthetic thinkers, manifested itself through an instinctive obedience to the same logic of collective interest.

The concept of the mass festival, which Lunacharskii and his associates developed around 1920, became a technology of awakening the collective consciousness in individuals, of making them realize their belonging to each other and through that—of creating the collective super-individual subject. Alongside the transformation of a crowd into a collective, this organization transformed celebration into an art form:

> Many believe that collective creativity presupposes a certain spontaneous, independent expression of the will of the masses; however, until social life teaches people a certain instinctive obedience to a higher order and rhythm, one cannot expect that a crowd would produce anything but a merry noise and the colorful vibration of people in holiday dress.
>
> A true holiday has to be organized, as everything else that has a tendency to produce a highly aesthetic impression.[517]

By participating in the same collective performance—a performance that had to be both beautiful and captivating—the masses were forced to fathom the enormous potential that losing oneself in a collective body entailed. This body, according to Lunacharsky, possessed such an attractive

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[517] Aleksandr Lunacharskii, "O narodnykh prazdnenstvakh" ["On popular celebrations"] (Reprinted at *Lunacharskii o massovykh prazdenstvakh, estrade, tsirke*), 85. Translation by the author. Russian original: «Многим кажется, что коллективное творчество разумеет некоторое спонтанное, самостоятельное выявление воли масс, между тем до тех пор, пока социальная жизнь не приучит массы к какому-то своеобразному инстинктивному соблюдению высшего порядка и ритма, никак нельзя ждать, чтобы толпа сама по себе могла создать что-нибудь, кроме веселого шума и пестрого колебания празднично разодетых людей.
Настоящий праздник должен быть организован, как все на свете, что имеет тенденцию произвести высоко-эстетическое впечатление».

power that, having seen it, an individual could no longer remain in isolation and was happy to surrender his or her independent existence to melt in this beautiful superhuman entity. A mass festival taught people to admire the collective body and its superhuman power and beauty, and to be proud of their new, limited, cell-like function within it while realizing its importance for the wellbeing of the collective.

In 1920, Lunacharskii himself devised a general design for Soviet mass celebrations.[518] According to this project, these celebrations were to be divided into two parts. The first, mass procession, presupposed "the movement of the masses from suburbs to a common center, or—if there are too many [people]—to two or three centers, in which a central action, such as a lofty symbolic ceremony, takes place." This ceremony could take a form of a "performance, grandiose, decorative, with fireworks, satirical or solemn; this can be some burning of enemy's emblems etc., accompanied by choral singing, concerted and extremely polyphonic music, bearing a character of a celebration in the true meaning of this word." During these processions, both urban decorations (such as specially constructed arches) and moving masses had to present a spectacle. After enjoying the performance at a city square, as Lunacharskii specified in 1925, the mass collectively performed a specifically composed cantata or "The International," which would "*allow the mass to feel its might and unity.*"[519] The second part was a more intimate festivity in smaller groups engaged in revolutionary speeches, political caricatures and satire, in which everyone could take an active part, as well as collective singing and dancing in city squares and streets. The festive spirit during this second part of the celebration was to be fostered

[518] Lunacharskii, "On popular festivals," 124.

[519] Lunacharskii, "On popular festivals," 124. Lunacharskii's emphasis.

by professional and amateur actors dissipated throughout the city.[520] Lunacharskii juxtaposed the "segregated" [*razdroblennyi*] character of the second part to the "mass organized" character of the first, comparing the celebration to a "large wave of people, which will flow from the faubourgs to the heart [of the city], then break into many bigger and smaller whirlpools."[521] If the first part of the celebration made the participants feel (that is, experience unconsciously) their belonging to the collective with its might and power, the second part allowed them to improve their personalities as elements of the collective body, fostering their understanding (conscious knowledge) of this body's anatomy and their personal function within it.

Immediately preceding the publication of Lunacharskii's article, the Section of Mass Performances and Spectacles of the Theatrical Department of Narkompros, obviously following the ideas of the commissariat, developed a proposal for the organization of May Day festivities in Moscow. The Section suggested "to work out a magnificent drama in which the whole city would be the stage and the entire proletarian masses of Moscow—the performers."[522] Rejecting initial proposals to base the festival on the myth of Prometheus or another topic "alien to the proletarian culture," it adopted the proposal of Aleksei Gan, one of the future leaders of

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[520] Lunacharskii, "O narodnykh prazdnenstvakh," *Lunacharskii o massovykh prazdenstvakh, estrade, tsirke*, 86.

[521] Lunacharskii, "O narodnykh prazdnenstvakh," *Lunacharskii o massovykh prazdenstvakh, estrade, tsirke*, 86. Translation by the author. Russian original: "огромная народная волна, которая с предместья прихлынет сначала к сердцу, потом разобьется на множество более крупных и мелких круговоротов».

[522] Sektsia teatral'nykh predstavlenii i zrelishch teatral'nogo otdela Narkomprosa [Section of Theater Performances and Spectacles of Theater Department of Narkompros], "Plan organizatsii pervomaiskikh torzhestv na ulitsakh Moskvy" ["Plan of Organization of First of May Celebrations on the Streets of Moscow"], *Vestnik Teatra* [*Theater Review*] No. 51 (February 1920): 5-8. Reprinted in I. M. Bibikova, Vladimir P. Tolstoi, and N I. Levchenko, *Agitatsionno-massovoe iskusstvo, oformlenie prazdnestv* [*Mass-Agitational Art and the Decoration of Celebrations*] (Moskva: Iskusstvo, 1984) 101-103. English translation: "A proposal for the organization of the May Day festivities on the streets of Moscow, drawn up by the Section of Mass Performances and Spectacles of the Theatrical Department of the Commissariat for Education, Narkompros, published in the journal *Theater Courier*," *Street Art of the Revolution*, 124-126.

Constructivism, to stage the history of the three Internationals.[523] The decoration of the city had to "imagine the Communist city of the future." Early in the morning, a loud siren was to sound from Vorob'ovy Hills (the space subsequently designated for the upper bank-part of the Central Park of Culture and Leisure), echoed by factory horns all around the city. The siren signaled to cavalry, motor-cycles, and vehicles to leave their seventeen outposts and move toward district squares, calling people into the streets. On the district squares, they were met by "agitation collectives" who "drew them into active participation in the festival." The act of the First International followed. Upon its completion, the masses started their movement towards the center of Moscow, passing through streets and squares renamed and symbolically decorated after sciences and arts: Geography Square with a huge globe painted in red to symbolize the world revolution, Astronomy Square, the Square of Political Economy. The Second International was to be celebrated in the center of the city. Finally, the masses moved towards the field of the International, where the collapse of the Second and the emergence of the Third International were staged.

For Gan, "the essence of the productive [*deistvennoi*] activity of the masses lays not in play, but in the serious striving of the class for action in the dynamic medium of a giant collective, reacting to the current political moment emotionally."[524] However, his suggestion that

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[523] The Theatrical Department of the Commissariat for Education, Narkompros, "A proposal for the organization of the May Day festivities," 125.

[524] Aleksei Gan, "Chto takoe konstruktivizm?" ["What is Constructivism?"], *Sovremennaia arkhitektura* [*Contemporary Architecture*] No.3 (1928): 79. Translation by the author. Russian original: «Сущность этой действенной активности масс заключалась не в *игре*, а в серьезной установке класса на *действо* как на активное средство огромного коллектива, реагирующего на текущий политический момент—эмоционально». In her recent thourough formal analysis of the festival proposal and Gan's other work on street celebrations, Kristin Romberg, rightly pointing at many important notions used by Gan (for example, in her analysis of Gan's usage of the collective pronoun "we" or the concept of creativity), stopped short of identifying their collectivist roots (See, Kristin Romberg, "Critical Masses: Mass Action and the Origins of Russian Constructivism,"

Fig.4.3. Moscow workers carrying a prototype model of workers' housing during a demonstration, between 1927 and 1931.

a festival offered the means for an emotional unification of the people did not exclude consciousness from this unifying act. On the contrary, his project offered ways of establishing a dialectics of the unconscious and the conscious, a dialectics in which unconscious physical movements served asa the means of awakening consciousness of one's moving body and political attitudes. Such techniques placing obstacles on the way of the procession, arranging the crowd into organized columns, and ascending steps and slopes prompted the masses "involuntarily"to overcome their passivity. Reminiscent of Viktor Shklovskii's concept of estrangement, which postulated that the perception of true art was difficult, defying easy gratification and requiring an overcoming of the resistance of the object, the demonstrating columns had to pause on their way to pay attention to obstacles. Their consciousness was unconsciously awakened, and from the state of "passive contemplation" they moved to that of "active participation," transforming themselves from "spectators" to "performers."

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chapter in *Aleksei Gan's Constructivism, 1917-1928*. Diss. Columbia University, 2010, 9-94, in particular, section "May Day, 1920: A Formal Analysis," 52-79). What the passage in fact declared was Gan's adherence to the collectivists' version of Darwinism: it asserted the festival as a serious and active work (a work that is, in a Marxist sense, was opposed to idleness), in which the collective subject was born unconsciously, following the instinctive mechanisms of the species' logic.

It remains unclear from Gan's proposal whether or not he envisioned the second, "segregated," part of the celebration proposed by Lunacharskii. Perhaps, since it was less organized and more spontaneous, the second part remained outside the Section's artistic control. Nevertheless, it is significant that the Section's proposal did not mention this part, which would—in spite of Lunacharskii's reiteration of its importance in 1925—disappear from the scenarios of mass celebrations towards the end of the 1920s.[525] In fact, the emergence of the Park of Culture and Leisure as a novel type of urban space—a space designed to absorb and host the entire population of the city—marked precisely the moment of disillusionment in the idea of "segregated," spontaneous and non-censored celebrations and discussions. Moreover, this disillusion was paralleled by a simultaneous disappearance of other architectural types that enabled group gatherings: in the early 1930s, for example, the famous avant-garde workers' clubs, with their small spaces for debates and discussions, were replaced with "palaces of culture" with large halls that seated thousands of spectators. If in Lunacharskii's project the whole city was to be transformed and activated by celebration, which lacked a single center and which both started and finished in residential neighborhoods, shortly afterwards the situation dramatically changed and the festivity became focused around a central point. It was this role of the celebration's focal point that the Park of Culture and Leisure was to play.

The park's program was developed with the active participation of both Lunacharskii and Gorky, who ensured that it bore a strong impact of their collectivist ideas, most importantly, the of notion of the collective subject. In 1929, the park received a new director, Lunacharskii's

[525] Lunacharskii, "K uchastiiu v prazdnike privlech' massy" ["To attract the masses to the participation in the celebration"], *Sputnik agitator* No.18 (1925): 37-39. Reprinted at: *Lunacharskii o massovykh prazdnenstvakh*, 122-125.

protégé Betti Nikolaevna Glan (1904-1992), a twenty-five-year-old woman who already had the experience of leading one of the largest Moscow workers' clubs and participating in the executive committee of the Young Communist International.[526] Young, energetic and enthusiastic, "a person of a Komsomol stuff, who could inspire people and raise them for a large work," Glan herself seemed to embody Lunacharskii's ideal of a new person.[527] Her particular task was developing the concept of the Park as the major venue for mass festivities and celebrations in Moscow. The art of mass celebrations, the importance of which somewhat diminished during the NEP years, was again remembered with the announcement of the First

[526] Born and educated in Kiev (now Ukraine)—the native city of Lunacharskii—Glan was a daughter a food company director who came from a working background. Her parents put a great emphasis on their children's education, including music and arts. In 1918-19 she started a theater studio in her high school, visiting and staging performances and inviting actors to meetings. In 1920, at the age of sixteen, she was noticed by Lunacharskii, who invited her to join his team in Narkompros due to her excellent knowledge of French and German. Having moved to Moscow in the fall of 1920, Glan was made the executive secretary of the Chief Committee of Arts [*glavnyi khudozhestvennyi komitet*] and continued her studies at the French Department of the Higher Courses of Foreign Languages. Lunacharskii occupied a paternal position in relationship to her, frequently inquiring about her progress and life. Since 1921, Glan headed the workers' club at Factory No. 1 (later renamed into Znamia Truda, "The Banner of Labor") and subsequently the youth club of Krasnopresnenkii district committee of the Communist Youth International. She graduated from the International Department of Moscow State University in 1925. In March 1929, unexpectedly for her, Glan was "sent" to the Park. In the position of the park's director, the twenty-five-year-old performed the function of Lunacharskii's agent, responsible for furthering his ideas and implementing them within the park. When in May 1929 Lunacharskii contacted Glan about the Park of culture and leisure, he was no longer a mentor, "under whose influence crystallized my worldview and my life principles," but rather a "theoretical and practical instructor in an endeavor for which, as it seemed to me, I had been internally preparing [myself] for years." (Betti Glan, *Prazdnik vsegda s nami* [*Festivity is always with us*] (Moskva: Soiuz teatral'nykh deiatelei, 1988) 26).

[527] Mikhail Korzhev, "Doklad o tvorcheskom puti parkovogo arkhitektora, chlena SSA i chlena sektsii ozelenenia goroda Moskvy Prokhorovoi Militsy Ivanovny" ["Report on the professional path of a landscape architect, member of Soviet Union of Architects and a member of the Section of Greening of the city of Moscow Militsa Ivanovna Prokhorova"] March 1960, page 8. Unpublished manuscript. Archive of A.V. Shchusev State Museum of Architecture, Moscow. Glan's cheerfulness underwent a hard test of life: in 1932, her brother Iakov Il'in, a prominent Soviet writer and the chief editor of Komsomol newspaper *Komsomol'skaia Pravda*, died of tuberculosis at the age of twenty seven; in the early 1930s, her two children died of a sun-stroke received on a Sochi beach; in 1937 Glan's husband Milan Gorkić, the head of the Central Committee of the Communist Party of Yugoslavia between 1932 and 1937, was executed, while she herself was subjected to repression. Rehabilitated after the death of Stalin, in 1955 she returned to work at the Union of Composers of the USSR, All-Russian Theatrical Society, and the Union of Theatrical Workers of the RSFSR. In 1988 Glan published her memoirs, *Festivity is always with us* [*Prazdnik vsegda s nami*].

Five-Year Plan, which both economically and symbolically revived the spirit of the War Communism.[528] According to one of its proponents, the mass celebrations possessed a potential for becoming "the most grandiose, synthetic, monumental of arts; the most powerful weapon of political education of the masses, [of] charging them with the enthusiasm of construction, a means of overcoming individual psychology" that allowed for the "involved enthusiasm" of people.[529] The first principle of this synthetic art of the future was its monumentality: the sensation of power, might, and grandiosity manifested in increased size, number, and volume. Mass celebrations were to bring together artists of various specializations: decorators of streets and squares, designers of costumes and banners, makers of movable platforms, installations, and dolls, directors of performances and pantomimes, music directors, musicians and theater and circus actors.

If in the early 1920s the artistic organization of revolutionary processions and festivities focused on static decorations of streets and squares, now the emphasis shifted to performance: banners, costumes, and movable objects (such as puppet figures and theatrical installations) were paraded through the streets of the city.[530] A number of art collectives and institutions took the

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[528] War Communism [*voennyi kommunism*], a period in early-Soviet history that coincided with the Civil War (1918-1921) and was characterized by the nationalization of significant part of production, reduction of monetary exchange, forced expropriation of agricultural products from peasantry, limitations on private trade. With the end of the Civil War, the radical politics of the War Communism was replaced with a relatively liberal New Economic Policy (1921-1928).

[529] L. Roshchin, "Iskusstvo massovykh prazdnenstv. Revoliutsionnoe v iskusstve" [„Art of mass celebrations. Revolutionary in art"], *Iskusstvo v massy* [*Art to the masses*] No. 5-6 (1929): 25-30 (26, 28). Translation by the author. Russian original: «...чтобы стать самым грандиозным, синтетическим, монументальным из искусств; самым мощным орудием политического воспитания масс, зарядки их энтузиазмом строительства, средством преодоления индивидуалистической психологии».

[530] B. Zemenkov, *Oformlenie sovetskikh karnavalov i demonstratsii. Metodicheskoe posobie dlia izo-kruzhkov goroda i derevni* [*Design of Soviet carnivals and demonstrations. Workbook for art-groups of town and village*]. (Moskva: Khudozhestvennoe izdatel'skoe akts. o-vo AKhR, 1930) 8.

responsibility for developing the principles of these objects' design and constructing their first examples. At VKhUTEIN, the Theater-Decoration Sector [*teatral'no-dekorativnoe otdelenie*] of Painting Department, headed by artist Isaak Rabinovich, was by the late-1920s renamed as the Decoration Sector to reflect its new task, which now went beyond the design of stage-sets and included the entirety of work on the organization of mass spectacles and parades.[531] Another major center of festival design was Izofabrika [art factory] at the Central Park of Culture and Leisure, which employed many graduates of VKhUTEIN's Decoration Sector and designed not only festival decorations, but also large- and small-scale puppets and sculptural groups for the Park; in order to help other artists to learn about the subject, Izofabrika opened a museum (which remained, however, small and underfinanced) devoted to the design of mass processions and festivals.[532] The Art Sector of APU (*Arkhitekturno-planirovochnoe upravlenie*, Architectural-Planning Office [of the city of Moscow]) was another organization involved into the work on the design of parades and celebrations. Finally, in Leningrad, similar functions were performed by

[531] Selim O. Khan-Magomedov, *Vkhutemas: 1920-1930 : Tekstil', Skul'ptura, Zhivopis', Grafika, Keramika, Metall, Derevo, Arkhitektura* [*VKhUTEMAS: 1920-1930: Textile, Sculpture, Painting, Graphic Art, Ceramics, Metal, Wood, Architecture*]. In 2 vols. Vol. 2 (Moskva: Lad'ia, 1995) 266. Among his students were important festival designers Ariadna (Ada) Solomonovna Magidson (1906-1981), Nadezhda Solomonovna Starodub (1902-?), and Flora Tigranovna Sevortian (1904-1978).

[532] A. Kuznetsova, A. Magidson, Iu. Shchukin, *Oformlenie goroda v dni revoliutsionnykh prazdenstv* [*Decoration of a city during revolutionary holidays*] (Moskva-Leningrad: OGIZ-Izogiz, 1932) 118-119.

Figs.4.4-4.5. *Nazi* and *Nepmen*, Izofabrika of Central Park of Culture and Leisure (TsPKiO). TsPKiO, c.1931 (?). Photographs by Branson DeCou.

the artists of Izoram [*Izo rabochei molodezhi*, Art of Working Youth], an amateur art organization of Komsomol (Communist Youth).[533] The first chief artist of the park was the Hungarian Béla Uitz, who substantiated mass carnivals and celebrations as a socialist alternative to the capitalist program of a Luna-park.[534]

The core of the mass procession was formed by moving platforms with installations and theatrical pantomimes. According to one of the new art's theoreticians, the performances had to be "a short, quick grotesque—with eccentrics, clownery, dances, topical song. A kaleidoscope of mummies of social-democratic opportunism, the degenerates of capitalism and the wastes of our everyday life—this is what a demonstration needs."[535] The procession celebrating the opening of the Central Park of Culture and Rest in 1929, for instance, featured 54 trucks with theatrical platforms that moved through Red Square and other parts of Moscow. Staged by a group of

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[533] See Ivan Matsa, *Leningradskii Izoram* [*Leningrad Izoram*] (Moskva-Leningrad: OGIZ-Izogiz, 1932).

[534] A. Antonov, "Pochemy Bela Uitz proletarskii khudozhnik" ["Why Bela Uitz is a proletarian artist"], *Iskusstvo v massy* [*Art to the Masses*] No. 6 (1930): 5-9.

[535] K., "My vyzyvaem!" ["We challenge!"], *Iskusstvo v massy* [*Art to the Masses*] No. 5-6 (1929): 22-24 (23).

Fig. 4.6. *Colonized India*. Installation by E. I. Kheifetz paraded through the streets of Moscow, 1929.

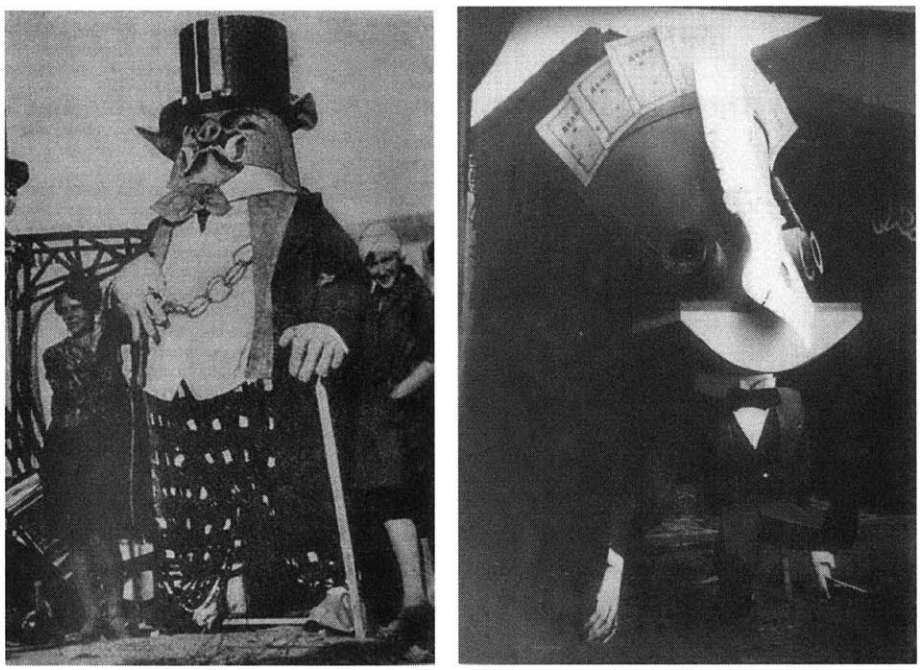
theater directors under the guidance of Sergei Radlov,[536] all the pantomimes illustrated the motto "The Soviet Union is the stronghold of world revolution."

An analog of newspaper caricature, the figures of these installations and pantomimes were comically distorted in form and possessed exaggerated, stylized features, always painted in bright and contrasting colors. If represented by actors, the latter had to be "on stilts, with an unnaturally enlarged figure, with a characteristic mask on the face, with a thunder-like voice."[537] The message of these pantomimes and installations had to be simple and immediately accessible to audience, which often had only a few minutes to appreciate them and frequently viewed them from a distance. Reductionism, abstraction and simplicity—justified by the laws and conditions of perception in the same way as they were by proponents of abstract art—became the principles of the mass celebrations art of the late 1920s, whose products, indeed, often resembled Cubist sculpture of the previous decade. Allegorical figures and dolls, depicting an easily recognizable, usually negative character—a drunkard, an American capitalist, Kuomintang leader Chiang Kai-shek or Polish marshal Józef Piłsudski—had to provoke an unequivocal emotional reaction. Even when mocking up a real person, figures and masks

[536] Sergei Ernestovich Radlov (1892-1958) worked at the Petrograd section of Narkompros in 1918-1919, afterwards headed several experimental theaters.

[537] K., "My vyzyvaem!", 22.

avoided details and attempts at portrait resemblance. Instead, they offered a symbolic representation of the vice associated with the person, which was presented as a social type.[538] The exaggerated, caricature-like puppets precluded the possibility of uncannyness, which German turn-of-the-century psychologist Ernst Jentsch and, to a certain extent Freud, connected with animated automations and wax figures, which made the viewer doubt whether they were in fact animate or lifeless.[539] Presenting no enigma, the figures paraded during Soviet demonstrations were unambiguous about their origin and meaning.



Figs. 4.7-4.8. *American Pork King* and *Bureacrat*, VKhUTEIN, c.1929.

[538] Zemenkov, 68.

[539] See Ernst Jentsch, *Zur Psychologie Des Unheimlichen*, Halle a.S, 1906; Sigmund Freud, „Das Unheimliche," *Imago. Zeitschrift für Anwendung der Psychoanalyse auf die Geisteswissenschaften* V (1919), 297–324, translated into English as "The Uncanny," *The Standard Edition of the Complete Psychological Works of Sigmund Freud*, XVII. Ed. and transl. James Strachey et al. (London: The Hogarth Press and the Institute of Psycho-Analysis, 1955) 218-252.

In an almost Constructivist spirit, the materials used for these figures were often exposed: plaster or wood for heads, tin, metal and veneer for bodies and clothing, bast for hair. Take, for instance, "American Pork King," created by VKhUTEIN students of the Decorative Sector under the direction of Rabinovich for a carnival in the Park of Culture and Leisure in 1929: composed of plaster (head), veneer (cylinder), fabric (frock), bronzed rope (watch chain), it had a pig's snout instead of a nose, pig's-like ears, and a moustache resembling a hog's canines. Often, not only unexpected materials but ready-made objects were used for the figures, augmenting the comical effect. A "Bureaucrat," also prepared by Rabinovich's students at the same time, was assembled of real and stylized "tools" of his work: folders made up his hair, a pen symbolized the nose, and inkwells served as eyes. Resembling costumes made for the Bauhaus costume parties, such as the "Metallic Party" in Dessau in 1928, where the guests came "dressed" in various metallic objects, VKhUTEIN figures and their costumes—as well as carnival costumes made by the participants of Soviet carnival factory and club parties—mixed the aesthetics of Dadaism with that of *lubok* (Russian popular prints).[540] Moreover, often the figures and installations depicted not people, but allegories (France as a pretty woman dancing on the backs of slaves), abstract notions (bureaucracy) or objects, such as the primus stove paraded through Moscow in 1925 when the primus stove factory Krasnogvardeets presented a giant model of its product topped with a frying pan, on which a Polish nobleman sat, and as soon as the worker at the bottom pumped air, the doll "in panic, made most humorous jumps."[541]

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[540] More on the "Metallic Party" see Juliet Koss, "Bauhaus Theater of Human Dolls," *The Art Bulletin*, Vol. 85, No. 4 (Dec., 2003): 724-745 (739).

[541] Zemenkov, 75.

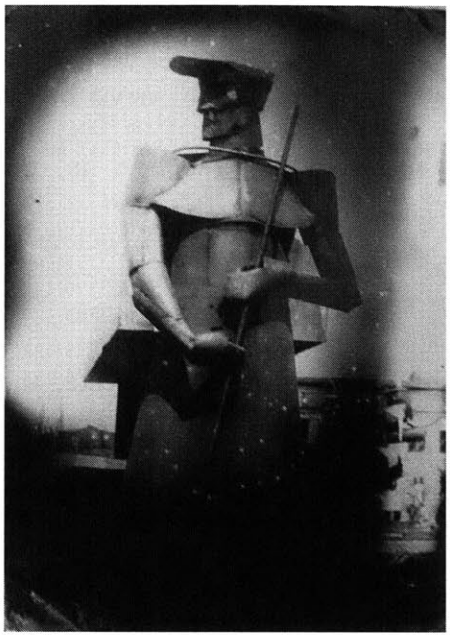

Fig.4.9.VKhUTEIN, *Worker*. Tin installation, before 1932.

For all their modernism, these figures appealed to, or even encouraged and stimulated, the "feminine" qualities of crowd psychology as distinguished by Le Bon: exaggerated emotionality, thinking in images rather than concepts, the polarity of feelings, and a propensity for illusions and fantasies. They, too, reflected collectivism's reversal of crowd psychology assessment. Indeed, for Glan, a celebration had to convince one of the advantages of socialism not by logical reasoning, but by a "cheerful and joyful organization of pastime"—a collective emotional experience.[542] Lunacharskii, as well, listed these "feminine" qualities as the methods of a true art—an art that affects its viewers through vivid, exciting images:

> But art impacts the behavior of a person precisely when it speaks with images, and it seems that you are affected by an extremely bright piece of real life. At the same time, the language of images has a powerful effect only if it is not torn away from reality. The more evident the subjective, the individualistic, the lesser is the value of artwork. … Originality must lie in that, in an artwork, objective images drawn from life become overgrown with lyrics and [start to] dictate to the person a particular behavior, emotionally exciting him [or her]. … [Satire] charges, makes [one] act, but not by means of persuasion, through logics, but rather by immediately affecting feelings.[543]

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[542] Betti Glan, "Za sotsialisticheskii park" ["For a socialist park"], *Za Sotsialisticheskii Park: Obzor Proektov General'nogo Plana Tsentral'nogo Parka Kul'tury I Otdykha Mossoveta* [*For a socialist park: a review of projects for the general layout of the Central Park of Culture and Leisure of Mossovet*], ed. Betti Glan (Moskva: Izd-vo Mosoblispolkoma, 1932): 7-20 (14).

[543] Anatolii Lunacharskii, *Iskusstvo kak vid chelovecheskogo povedenia* [*Art as a type of human behavior*] (Leningrad-Moskva: Gosudarstvennoe meditsinskoe izdatel'stvo, 1930) 26. Translation by the author. Russian original: «Но искусство действует на поведение человека именно тогда, когда оно говорит образами, и кажется, что на вас воздействует необычайно яркий кусок реальной жизни. При этом образный язык воздействует мощно лишь в том случае, если не отрывается от действительности. Чем виднее субъективное, индивидуалистическое, тем меньше ценность произведения. … Оригинальность должна заключаться в том, чтобы в художественном произведении объективные образы, почерпнутые из жизни, обросли лирикой и

Fig. 4.10. Sculptural group "Hooligans" and its audience at TsPKiO, 1931-1932.

Easy to dismiss as kitsch, these figures and installations nevertheless possessed an important function in the program of building a modernist society in the USSR. Operating as analogs of contemporary mass media, they educated the working population in recent political events and taught them the basics of healthy lifestyle and work attitudes. Even if this education and this information served as propaganda intended to produce loyal and obedient subjects, it allowed to "activate" people, making them feel engaged in the life of the country and enabling them to understand the strategic purpose and significance of their work. It allowed the workers to overcome the alienation from the results of their labor—even if that overcoming could be called a mere illusion.[544] The activated worker could feel him- or herself a master in the country, experiencing a sense of collectivity and comradeship with those who were on the same side of the "barricade" erected by the festival's designers. The unorganized masses, in other words, were transformed into the organized.

диктовали человеку определенное поведение, волнуя его эмоционально. Сатира… заряжает, заставляет действовать, но только не убеждающее, через логику, а непосредственным воздействием на чувства».

[544] Indeed, equally illusive (in other words, abstract) is the very concept of alienation, which is based on the idea of psychological satisfaction of the worker who possesses the results of his or her labor.

Mass processions, festivals and exhibitions of allegoric figures in the Park of Culture and Leisure were soon supplemented with another type of spectacle—a grandiose performance viewed by tens of thousands of spectators—whose concept was developed by Betti Glan in the course of discussions with Maxim Gorky and other members of the former collectivists' circle. One of these discussions took place during a dinner at Gorky's house in 1934, where the guests, apart from Glan, included writer Aleksei Tolstoi and theater actor Boris Livanov. The conversation at the table moved to the necessity of developing a method for the emerging genre of mass theater, destined to replace traditional theater in the socialist society. Tolstoi suggested that the new Soviet mass theater should be based on the genre of magic extravaganza, *féerie* [Russian, *feeria*]. Emerged in the court theaters of seventeenth-century France and Italy, *féerie* was an expensive, richly decorated spectacle based on a magical, fairy-tale subject (hence its name, which stems from the French word for fairy, *fée*). Magical transformations of people into things and things into people, sorcery and witchcraft were indispensable for *féeries'* plots. The most expensive of "low," entertaining genres, *féerie* boasted lavish decorations, costumes and complicated technological props, machinery and mechanical automata, which often performed alongside human actors depicting animated objects and other supernatural beings. In the nineteenth century, *féerie* was democratized, and after the 1860s the genre attracted many luminaries of nineteenth-century culture—Charles Nodier, Victor Hugo, George Sand and Gustave Flaubert in France, and Lesia Ukrainka in Ukraine—who reinterpreted it in a late Romantic mode as a manifestation of folk spirit; at the same time, it was merged with such newly popular genres as operetta and circus. In Moscow, the "Fantastic Theater" of director Mikhail Leontovskii and stage set designer Karl Valts (Walz), was opened in 1882, enjoying

great popularity due to its expensive performances and stage sets, sophisticated special effects, and the grand scale of its mass scenes.

Magic transformations that defined *féeries'* subject related it to another nineteenth-century favorite, phantasmagoria, which Walter Benjamin eloquently located at the origins of modernity pointing to world fairs as a framework, in which the intrinsic value of things was eclipsed by their exchange value as commodities.[545] Likewise, Tolstoi's *féeries* were to eclipse things' "intrinsic value," replacing it with their symbolic value in the emerging mythology of Stalinist culture. Tolstoi called for "dramatic 'actions'" that would outdo the opulence of eighteenth-century court performances and nineteenth-century spectacles, utilizing "all achievements of theater technology," and employing "hundreds of actors or perhaps entire military units, with an airplane above the stage." Moreover, unlike a traditional *féerie*, the Soviet one, according to Tolstoi, had to be "heroic," that is had "to demonstrate the people's heroic struggle as well as its creative [*sozidatel'nyi*] labor."[546] Erasing the boundary between spectacle and reality, between theater and life, Aleksei Tolstoi's heroic *féerie* created a magic, fairy-tale effect through the exaggerated realism of the stage-set and the performance. It valorized dreaming by emphasizing the transparency of the boundary between fantasy and reality, by promising the possibility of the impossible and by charging mundane, even if novel and advanced, objects with aura, symbolic significance and magic.

Articulating his concept, Tolstoi could already refer to the experience of giant performances, staged by Glan at the Park of Culture and Leisure since 1930. As full of magic

[545] Walter Benjamin, "Paris, the Capital of the Nineteenth Century," *The Arcades Project* (Cambridge, MA: Belknap Press, 1999) 17-18.

[546] Glan, *Prazdnik vsegda s nami*, 104.

and miracles as a *féerie,* these performances, nevertheless depicted not the world of a fairy tale, but the "real" world of the future, which was to be created by the power of the spectators themselves. Making the viewers believe in the possibility of magic transformations and in their superhuman power, Glan's shows made them proud of their collective achievements and persuaded them of the necessity of further heroic, selfless work. One of these spectacles, a show devoted to the Sixteenth Congress of the Party on 11 July 1930, staged on the water at a warm and dark summer night, created a magic atmosphere that revived the *féerie* spirit.[547]

> The river gleams in the rays of projectors. On the banks—dozens of thousands of people. On the water, a violent fight of imperialists with revolutionary proletariat [and] the Red Army unravels. A huge barge is decorated as a dreadnought. On it, a huge white figure of the Pope. Hundreds of boats with representatives of oppressed colonial peoples (Indians, Chinese, negroes) dash into attack. Dozens of swimmers from the "Soviet" bank help them to overthrow the Pope. On the contrary bank, gleaming in the silver light of the projectors, flies the Red cavalry. Volley—and the huge figure under a thunderstorm of applause crawls down the bank. [548]

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[547] The atmosphere of a night celebration created by Glan revived Lunacharskii's suggestion from ten years earlier: "It would be good if... an evening procession would be organized under a torch or another artificial light, which, for example, created several wonderfully sonorous accords during Petrograd celebrations: the procession of united fire-fighters of the entire Petrograd in bright copper helmets and with flaming torches in hands" (*Lunacharskii o massovykh prazdnenstvakh*, 86. Translation by the author. Russian original: «Хорошо, если бы в меньшей степени и несколько меньшими группами организовано было шествие вечером при факельном или другом какомнибудь искусственном освещении, что, например, создало несколько удивительных звучных аккордов во время петроградских празднеств: шествие объединенных пожарных всего Петрограда в ярких медных шлемах и с пылающими факелами в руках»).

[548] Betti Glan, *Park kul'tury i otdykha* [*Park of culture and leisure*] (Moskva: s.l.: 1934) 69. Quoted in: Katarina Kucher, *Park Gor'kogo. Kul'tura dosuga v stalinskuiu epokhu 1928-1941* [*Gorky Park: A Culture of Leisure during Stalin's Time. 1928-1941*]. (Moskva: Rospen, 2012) 163. Translation by the author. Russian original: «Река сверкает в лучах прожекторов. На берегах—десятки тысяч людей. На воде идет жестокий бой империалистов с революционными пролетариями, с Красной Армией. Огромная баржа декорирована под дредноут. На ней—большая белая фигура папы римского. Сотни лодок с представителями угнетенных колониальных народов (индусами, китайцами, неграми) устремляются в атаку. Десятки пловцов с «советского» берега помогают им низвергнуть папу. На противоположенном берегу, озаренная серебристым светом прожекторов, несется красная конница. Залп—и огромная фигура под гром аплодисментов с берегов ползет вниз».

Celebrating the victory, lights flashed up on the contrary bank of the river. A dam topped by a sign "Dneprostroi" poured fireworks of splashes and sparkling gleaming waterfalls, celebrating the construction of a giant hydroelectric plant that provided power for the heavy industry in Ukraine. Before they could dim, the next proud sign--"Traktorstroi" [tractor construction]—emerged from the darkness. The first USSR-produced tractors proudly drove from the gleaming gates of the factory. Commemorating the construction of a railroad across southern Kazakhstan, the appearance of a "fiery" train "Turksib" crowned the spectacle.

Glan claimed credit for inventing a novel type of mass spectacle, the one in which objects and machines participated alongside human actors as the heroes of the battle for socialist construction.[549] This was, of course, a modern adaptation of a *féerie;* it reflected, however, not only an attempt to build upon a historic precedent of a breathtaking spectacle, but the new Soviet discourse, in which objects were frequently presented as people's co-workers. A tractor, for instance, was widely celebrated and mythologized in the course of the First Five-Year Plan. It was introduced into the pantheon of Soviet worthies not only as a symbol of modernity and industrialization, but as an animated hero that possessed a power to transform human psyche. Describing his experience of visiting an agricultural commune in Ukraine in an article eloquently titled "The Life of a Tractor" Lunacharskii's protégé artist Amshey Nurenberg[550] not only exalted the tremendous economical significance of the tractor in rural life, but highlighted its significance for casting the new Soviet subjectivity:

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[549] Betti Glan, "Tri goda raboty parka" ["Three years of the park's work"], *Park kul'tury i otdykha* No.1 (12 August 1931): 1.

[550] Amshei Markovich Niurenberg (1887-1979)—Russian and Soviet painter, in the 1920s was an art correspondent of *Pravda*; worked together with Vladimir Mayakovski on the "ROST Windows"; taught the history of Western painting at VKhUTEMAS. In 1927-1929 Niurenberg was sent by Lunacharskii to Paris to lecture on Soviet art.

> Traktor—*tse kommunist, til'ko na kolesakh* [A tractor is a communist, only on wheels (Ukranian)]. Tractor replaced an "old" peasant by a plough with a modern mechanic. Our Soviet soil is tailored by a man smelling of petroleum and kerosene. Tractor switched village life from low to high speed. It is awkward to work on the sly in the presence of this wide-pelvis, puffing machine. Embarrassing and stupid.[551]

Moreover, a tractor not only transformed the psyche of peasants, but possessed its own personality and character, its rhythm and lifestyle that had to be "felt" and "loved": "He came back after the stars lighted up and the cattle lapsed into silence. Tired, covered with dust and greasy sweat, he resembled a big grey ox. … How much richer is his world than that of a horse! What a sleepy provincial does she look like in comparison to him!"[552]

The concept of active socialist objects as agents of culture and modernity had been articulated in the "avant-garde" circles several years earlier. Unlike capitalist commodities, socialist objects, which were theorized by Constructivist aesthetic thinker Boris Arvatov in 1925 in an article "Byt i kul'tura veshchi" ["Everyday Life and the Culture of the Thing"], acted as "agents of socialist culture" transforming the mindset and even the bodily habits of people: "The new world of things, which gave rise to a new image of a person as a psycho-physiological individual, dictated forms of gesticulation, movement, and activity. It created a particular regimen of physical culture. The psyche also evolved, becoming more and more thinglike in its

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[551] A. [Amshei] Niurenberg, "Zhizn' traktora," *Iskusstvo v massy* [*Art to the Masses*] No. 5-6 (1929): 12-14 (14). Translation by the author. Russian original: «Трактор—це коммунист, тилько на колесах. Трактор поставил у плуга, вместо «старинного» крестьянина, современного механика. Нашу советскую землю обрабатывает человек, от которого пахнет нефтью и керосином. Трактор перевел жизнь деревни с малой скорости на большую. Становится неловко в присутствии этой широкозадой, пыхтящей и потеющей машины работать под сурдинку. Совестно и глупо».

[552] Niurenberg, "Zhizn' traktora," 14. Translation by the author. Russian original: «Он возвращался после того, как зажигались звезды и умолкал скот. Усталый, покрытый пылью и жирным потом, он был похож на большого серого вола. Его устраивали под навесом и он мгновенно засыпал мертвым сном. … Насколько его мир богаче мира лошади! Какой сонливой провинциалкой она кажется здесь на его фоне!» The gendering of the tractor and the horse in the translation follows their grammatical genders in Russian language.

associative structure."[553] The parallel between the theoretician of radical Constructivism and the techniques of proto-totalitarian manipulation in the Park of Culture and Leisure becomes more convincing if one considers their mutual indebtedness to collectivist discourse—indebtedness that has remained largely unrecognized by contemporary scholars of Constructivism. Indeed, although it demonstrated Arvatov's departure from orthodox Marxim, Christina Kiaer's analysis of his concept of "comradely objects" avoids connecting it with Bogdanov's "organization science" and his theories of "proletarian culture" in spite of the fact that, published in *Proletkul't's Almanac* [*Al'manakh proletkul'ta*], Arvatov's text abounds with references to Bogdanovite ideas, in particular, to the notion of organization as the mechanism of forging a socialist subject.[554] The goal of Arvatov's active socialist objects was to provide society "with a maximum economizing of its energy, and maximum organizing possibilities."[555] Similarly, the notion of organization was at the forefront of the concept of park of culture and leisure, which aspired to organize the masses in order to facilitate their collaborative work. Moreover, Arvatov's interpretation of things as "forms, that is, as detached skeletal formations," and his anti-functionalist belief that it was not the content or construction, but the form of things that was the secret of their progressive or regressive psychological role, detach his text from the received reading of Constructivist and Productivist programs, pointing to the omnipresence of collectivist discourse in Soviet culture of the mid and late 1920s.[556]

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[553] Boris Arvatov, "Byt i kul'tura veshchi," translated from the Russian by Christina Kiaer as "Everyday Life and the Culture of the Thing" in *October* Vol. 81 (Summer 1997): 119-128 (126).

[554] The article was published in a periodical of Proletkul't and abounds with notions introduced and heavily discussed by Bogdanov (such as organization, economy of energy).

[555] Arvatov, 128.

[556] Arvatov, 121.

It was not the person, but the object that became the true agent of social and economic change and the creator of the new socialist subjectivity. The creator and the created reversed their roles, the boundary between them becoming more and more transparent. The person happily and passively submitted to the impact of the product of his or her labor. Glan reflected this process in her *féeries*, which, she believed, destroyed the boundary between people and objects, between actors and spectators, albeit in a way very different from that offered ten years earlier by Gan. If the latter intentionally reminded the demonstrators of their temporal and spatial location by erecting obstacles along their path, the viewers of Glan's shows succumbed to the mesmerizing effect of the spectacle that transformed them into powerful agents of socialist construction. Excited and overwhelmed by being a part a crowd of many thousands, they plunged into a state of collective hypnosis, in which they forgot their individuality, experiencing an intense sense of belonging to the Soviet people, the organized mass, the single great collective subject.

Architectures of Organization

While Glan, conceiving the park as an activity of visitors, attempted to activate the masses through an organization of large-scale theatralized performances and spectacles, the development of the park's architectural program was left to designers. In September 1930, Moscow authorities agreed on the necessity of organizing a competition for the park's general layout. The winning project was to transform the Park of Culture and Leisure into "a powerful cultural [production] complex [*kul'turnyi kombinat*] combining mass political, scientific-popular, art-spectacle, and physical-culture and health work, intended to attract tens and hundreds of

thousands workers throughout the year." [557] After preparations that lasted one year, in the fall of 1931 the administration of the park announced the competition, which was then conducted by several organizations (Communist Academy, All-Union Council of Physical Culture, and others). A total of ten projects were submitted by major architectural organizations.[558] The brief asked to design a park that could host 150 thousand people daily and to specify "the principle of organizing the masses on its territory."[559]

Moreover, a team of architects worked at the Park of Culture and Leisure on a permanent basis. The so-called Office of Design and Planning [*Proektno-planirovochnyi otdel*]—the park's architectural department—existed in the park from its earliest days, employing a group of architects even when no financial resources were available for construction work. The purpose of the Office was theoretical rather than practical: it functioned not (or not only) to satisfy the immediate needs of the park in elaborating a plan for its development, but, most importantly, as the center for conceiving design principles and solutions for all Soviet parks of culture of leisure, for which the one in Moscow served as a model. Employing mostly young VKhUTEIN

[557] "Vypiska iz protokola No.132 Zasedania prezidiuma Mosoblispolkoma i Moskovskogo Soveta R.K. i K.D. ot 14 sentiabria 1930." Quoted in Glan, *Za sotsialisticheskii park,* 3. Translation by the author. Russian original: «превращение Парка в мощный культурный комбинат, сочетающий массовую политическую, научно-популярную, художественно-зрелищную (профессиональную и самодеятельную) и физкультурно-оздоровительную работу, рассчитанную на охват в течение круглого года десятков и сотен тысяч трудящихся».

[558] The projects were submitted by: Scientific-Technical Society of Construction Workers (NTO Stroitelei): L. E. Biriukov, L. B. Velikovskii, N. S. Zarubin); ARU: V. P. Kalmykov, V. I. Fidman; The Brigade of Central Park of Culture and Leisure: L. S. Zalesskaia, I. P. Kychakov, M. I. Prokhorova; ASNOVA: T. N. Varentsov, S. A. Gel'dfel'd, A. I. Repkin, S. B. Bekker; VOPRA: P. I. Gol'denberg and V. I. Dolganov; ASI: A. V. Natal'chenko, P. P. Reviakin, K. Ia. Rogov; SASS (Sector of Architects of Socialist Construction, Sektor Arkhitektorov Sotsialisticheskogo Stroitel'stva, as OSA was renamed in 1930): I. U. Bronshtein; Moisei Ginzburg; Konstantin Mel'nikov; I. I. Klang and A. S. Korobov.

[559] Glan, *Za sotsialisticheskii park,* 4. Russian original: «Принцип организации масс на территории парка в соответствии с установками работы парка».

graduates, between 1928 and 1929 the Office was directed by Konstantin Mel'nikov, the renowned architect of the Soviet pavilion at the 1925 Paris Exhibition; Mel'nikov was then replaced by El Lissitzky, who remained the park's chief architect until 1932.[560] The choice of the two luminaries of Soviet avant-garde for the position of the head of the park's architectural office demonstrated the project's utter ideological importance and betrayed its claims to architectural novelty and left radicalism. However, as both Mel'nikov and Lissitzky were simultaneously engaged with other commissions and were not able to devote themselves fully to the work at the TsPKiO, the elaboration of the practical solutions for the park was left to their subordinates at the Office. Both Mel'nikov and Lissitzky had been previously affiliated with ASNOVA,[561] and the majority of VKhUTEIN graduates whom they employed were also connected with the Rationalist movement: Mikhail Korzhev, Vitalii Dolganov, Liubov' Zalesskaia, Militsa Prokhorova, Innokentii Kychakov, Mikhail Cherkasov were all among Ladovskii's former students who formed the core of the Office of Design and Planning in the late 1920s-early 1930s.[562]

At the time when architecture, landscape design, and urbanism were not yet differentiated in Russia, Ladovskii not only saw the three fields as belonging to the same discipline, defined as an arrangement of space, but believed that landscape architecture and urbanism, working with space rather than solid mass, presented architecture *par excellance.* Thus, founded in 1928,

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[560] In 1932, Goszelenstroi from *gosudarstvennoe zelenoe stroitel'stvo*, "state green building," was created under the Russian commissariat of infrastructure as the republican center for developing the methodology for landscape architecture (which included not only parks of culture and leisure, but also city squares, boulevards, and all other forms of landscaping), and most of the members of Office of Design and Planning moved to the new organization.

[561] ASNOVA (Association of New Architects)—architectural organization created by Nikolai Ladovskii, the center of architectural Rationalism. More on it, see Chapter One.

[562] Some, as Militsa Prokhorova, studied with both Mel'nikov and Ladovskii.

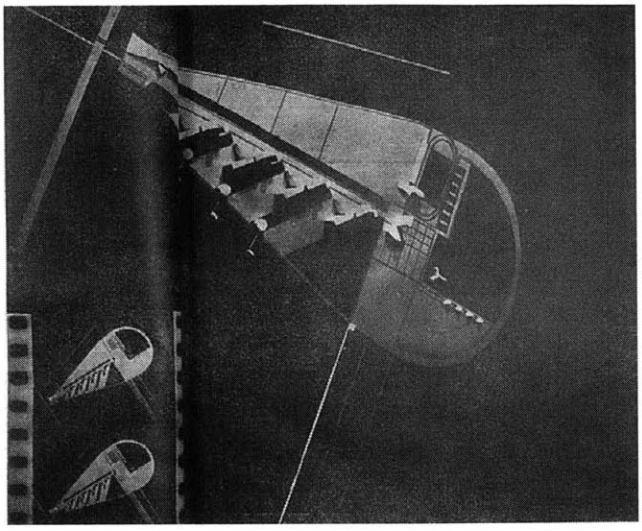

Fig. 4.11. Stills from the film documenting Kalmykov's model. VKhUTEIN, 1929.

Ladovskii's second organization, ARU (*Ob'edinenie arkhitektorov-urbanistov,* Association of Architects-Urbanists), was exclusively concerned with urban planning. The task of ARU urbanism was to unite separate buildings into a unified and coherent whole: "Architecture, understood as a unified spatial whole, not only has to solve the problem of design of separate structures, but also has to connect a group of structures into a unified spatial system, in which separate structures are only parts of the general architectural unity," its declaration claimed.[563] Applying this approach to architectural practice, Ladovskii, as his contemporaries recalled, walked along the streets of Moscow, usually at night or just before sunrise, when traffic and the flow of people did not prevent him from observing the picturesque changes of spatial perspectives, and analyzed what made the urban landscape appear to a walking subject a coherent spatial whole.[564]

Developing the methods of organizing perception of a coherent environment, of suturing separate impressions into a single perceptual continuum, Ladovskii and his group turned towards latest technological developments, first of all, cinema. Cinema, indeed, presented just what Ladovskii hoped architecture to become—a psychological illusion of a spatial and temporal

[563] "Ob'edinenie arkhtitektorov-urbanistov" [*Association of architects-urbanists*], *Arkhitektura i VKhUTEIN* [*Architecture and VKhUTEIN*], No. 1 (January 1929), 8.

[564] Selim O. Khan-Magomedov, *Ratsionalizm: Ratsio-arkhitektura: "formalizm"* [*Rationalism: Ratio-architecture-Formalism*] (Moskva: Arkhitektura-S, 2007) 385.

continuum constructed by artistic means. In one of the earliest film theory studies, *The Photoplay* (1916), Hugo Münsterberg (whose work on psychotechnics Ladovskii both studied and advocated) explored psychological mechanisms of cinematographic techniques, interpreting cinema as an art that operated with spectators' minds. In 1926 Lissitzky published an obituary of Swedish avant-garde film director Viking Eggeling in ASNOVA's newspaper *Izvestia ASNOVA*, (co-edited with Ladovskii), in which he underscored the importance of film, as an art operating with space and movement, for architectural theory. Three years later, Ladovskii introduced film as a new method of architectural representation into his pedagogical practice at VKhUTEIN. When his student Viktor Kalmykov created a clay model of the new socialist town Avtostoi that was to be built near Nizhniy Novgorod, the model was filmed and the film was then cut and reassembled to appear as if it had been perceived through the eyes of a moving subject. Describing his work with Kalmykov, Ladovskii explained the role of film projection in architecture:

> While I advised a project for a new planning of Avtostroj in Vkhutein in 1929/30, I developed and employed the principle of a new, more up-to-date method of project representation, a method that takes into account the coordinate of time—film projection. This method is especially important for an urban planner, who has to convey to others (and, first of all, to test himself) the organization of space in time. In this respect, none of... contemporary representation methods can compete with film projection.[565]

[565] Nikolai Ladovskii, "Planirovka Avtostroia i Magnitogorska" ["The Planning of Avtostroi and Magnitogorsk"], *Sovetskaia arkhitektura [Soviet architecture]* No. 1-2 (1931): 21-28 (21).

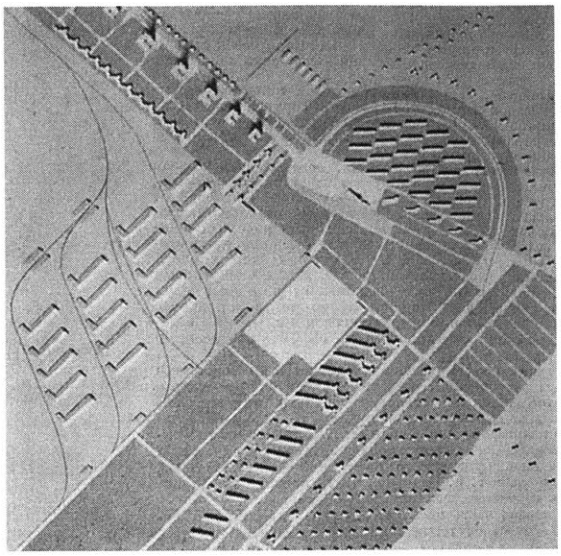

Fig. 4.12.Nikolai Ladovskii, Model of Kostino Village, 1929.

Moreover, Ladovskii seemed to be well aware of contemporary theory of montage, employing its key premises in his architectural projects of the late 1920s.[566] The contrast of planes, the framing of scenes, and rhythm were used by Ladovskii, for example, in a verbal description of his suburban "socialist town" of Kostino as a sequence of carefully framed and assembled picturesque shots.[567] Ladovskii suggested that readers imagine themselves walking through the town in order to obtain a faithful representation of landscape as it unfolded in time. The walk started at the train station, exiting which one looked upon a broad green parterre, flanked by small farmers' houses on the left and high-rise buildings of workers on the right, and leading towards a stadium, which was placed obliquely to facilitate the observation of its form. Reaching the stadium, one could choose to turn right to a small alley leading to the factory's main entrance, or left, to down a path that offered a variety of shifting views of the agricultural landscape. The composition was based on the principle of contrast between right and left, while

[566] Soviet montage theory was developed, first of all, by Sergei Eisenstein and Vsevolod Pudovkin. For its early elaborations, see Eisenstein's "Montazh attraktsionov: k postanovke 'Na vsiakogo mudretsa dovol'no prostoty' A. N. Ostrovskogo v moskovskom Proletkul'te" ["Montage of attractions: on the staging of 'Enough Stupidity in Every Wise Man' of A. N. Ostrovksii at Moscow Proletkul't"], *LEF* No.3 (1923): 70-75, and Pudovkin's *Kino-rezhisser i kino-material* [*Film Director and Film Material*] (Moskva: Kinopechat', 1926). On the connections between cinematographic montage and architecture, see Sergei Eisenstein, "Montage in Architecture (1937-1940), translated from the Russian by Michael Glenny, introduction by Yve-Alain Bois, *Assemblage*, No. 10 (Dec., 1989): 110-131. See also Anthony Vidler, "The Explosion of Space: Architecture and the Filmic Imaginary," *Assemblage*, No. 21 (Aug., 1993): 44-59.

[567] Nikolai Ladovskii, "Proekt planirovki trudkommuny 'Kostino'" ["Project of replanning of labor-commune 'Kostino'"], *Stroitel'stvo Moskvy* No. 7 (1929): 14-17.

the accelerations and complications of rhythm accentuated its most significant points, the factory entrance and the stadium.

A similar approach was used by the architect when thinking about the Central Park of Culture and Leisure—a task he assigned as the topic of diploma (thesis) projects to his students graduating in 1929: Liubov' Zalesskaia, Vitalii Dolganov, Mikael Mazmonian, Karo Alabian, Ivan Bolbashevskii, Oganes Bal'ian, and Sergei Matorin. Following the method of her teacher, Zalesskaia organized the park as a system of routes and perspectives. A 100-meters-wide alley led demonstrating columns of people toward the Rally Field, the compositional center of the park; along the way, a carefully planned arrangement of a series of "large spectacular points" [*krupnykh zrelishchnykh punktov*], which superseded each other as film stills, directed the movement of people through landscape.[568] These spectacular points were regulated by a series of parallel diagonal alleys, which hit the main alley at acute angles: the latter, according to psycho-physiological research, was perceived as full in comparison to "empty" obtuse angles and thus provoked in a visitor an unconscious desire to move forward in order to discover their content.[569] Zalesskaia used the same principle of acute angles to design the area of the main tram route, which, passing on the fringes of the Children's Village, led from the main entrance into the park. Located at its north-east corner, near the main entrance (so that the parents, having left their children in this "live cloakroom," could start their journey through the park[570]), the Children's

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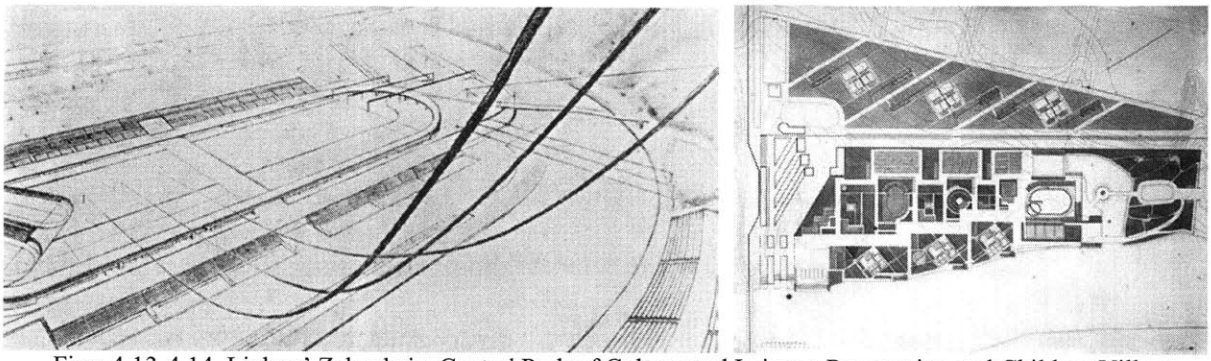
[568] Vitalii Lavrov, "Park ku'tury i otdykha v Moskve po proektam diplomnikov VKhUTEINa" ["Park of culture and leisure in Moscow in the projects of VKhUTEIN graduating students"], *Stroitel'stvo Moskvy* No.10 (1929): 13-18 (18).

[569] Georgii Chelpanov, "Glazomer i illiuzii zrenia" ["Eye-balling and visual illusions"], *Voprosy filosophii i psikhologii* No. 17 (1893): 45-54 (53), No.18 (1893): 1-13.

[570] Lavrov, "Park ku'tury i otdykha v Moskve po proektam diplomnikov VKhUTEINa,"18.



Figs. 4.13-4.14. Liubov' Zalesskaia, Central Park of Culture and Leisure. Perspective and Children Village, VKhUTEIN, 1929.

Village itself was structured by a zigzag alley, in which each segment terminated with an architectural monument.[571] The tram route then passed along a spectacular hilly bank of the Moscow River, offering a panorama of Moscow and a breathtaking view of the river.

Elaborating this idea for the 1931 competition for the design of the park, Prokhorova, Zalesskaia, and Innokentii Kychakov, working together as "The TSPKiO Brigade," supplemented their entry with a "Scheme of Transportation," which included both the means of connection between the park and the city and the transportation within the park. Metro, railway, and water transport were designed to bring visitors to the main entrances in the north-east corner and the center; trams and buses were to run along the upper bank of the river; and a "hanging railroad" (another idea borrowed from Zalesskaia's diploma project) united the two banks. Scenic perspectives offered by buses, trams, and, especially, the hanging railroad, whose sole purpose seemed to have been sightseeing, made the approach of the TSPKiO Brigade very different from modernist functionalist attitude to transportation. Rather, the spectacle of nature that the Brigade hoped to stage with the help of modern means of transport connected it to an old

[571] Lavrov, "Park ku'tury i otdykha v Moskve po proektam diplomnikov VKhUTEINa,"17.

tradition of landscape architecture, in which parks were experienced by horse riders.[572] In other words, making their design dependent upon transportation, the architects achieved not an economy of time or movement, but an efficiency of beholding, a faster and easier change of viewpoints, and ultimately, a deeper and more dramatic emotional effect. Zalesskaia, Prokhorova and Kychakov reinterpreted the functionalist preoccupation with modern transport within Ladovskii's theory of a unified spatial field, making trams and buses unite not places, but impressions.

If these projects explored the park's scenic possibilities, which were to be discovered by individual viewer with the help of means of transportation, other designs applied the theories of spatial perception towards the concept of mass subject. They saw in the park not a static architectural environment, but a framework for the visitors' activity, which constituted its true architecture. In other words, they designed not a static material environment, but in the architectural organization of the visitors' movement—an organization which, in the traditions of the aesthetics of the unconscious, was to remain unnoticed by the visitors. Furthermore, sharing Ladovskii's vision of inseparability of landscape architecture from urbanism and his interest in the latter, his students consistently situated their plans for the Park of Culture and Leisure within their vision of the replanning of Moscow and transforming the whole city into a stage for mass celebrations.

[572] Originating in the Renaissance, in the nineteenth century this tradition was continued by an exploration of the scenic possibilities of a railroad, and later still, a parkway.

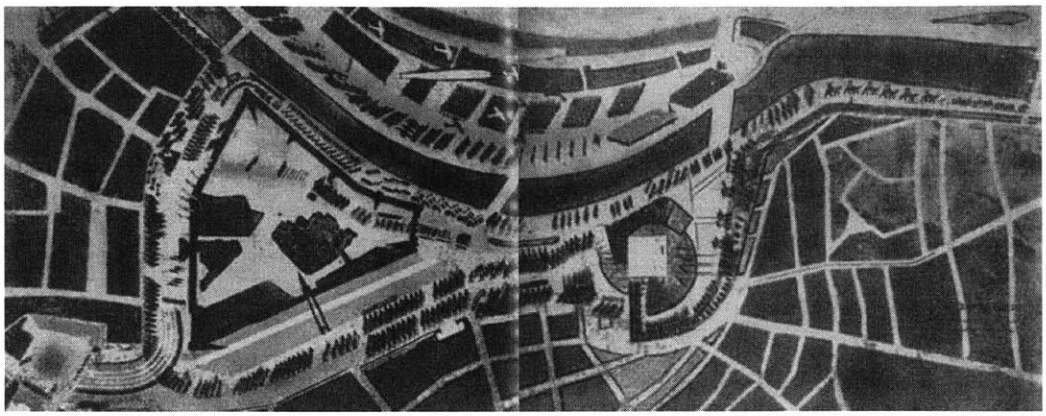


Fig. 4.15. ASNOVA Brigade, Palace of the Soviets. Competition Project, 1931.

In 1931, these ideas formed the core of several projects for the Palace of the Soviets's competition, in particular, those submitted by the two groups most directly affected by Ladovskii's teaching, ASNOVA and ARU.[573] The ASNOVA Brigade, which united architects Militsa Prokhorova, Viktor Balikhin, Mikhail Turkus, P. V. Budo, sculptor Romual'd Iodko, and a decorator of celebrations Flora Sevortian, proposed "not... a static monument, but... a live, acting organism, living the same life as the demonstrations and revolutionary-political mass celebrations."[574] The Brigade planned the Palace of the Soviets not as an independent ensemble, but as a part of a grandiose scheme of transforming Moscow into a space of mass spectacle, in which the Palace occupied a central place in the processional route between Red Square and the Park of Culture and Leisure. Thus, rather than a project for a building, the ASNOVA Brigade presented a scheme for mass processions moving through the city. Coming from Moscow's ten districts, the columns of demonstrators entered Red Square through a complex system of ramps, which allowed the flows to bypass each other and go in opposite directions just like the clover

[573] This infamous competition, eventually won by Boris Iofan's art-deco-like project, commemorated the demise of modernism in Soviet architecture.

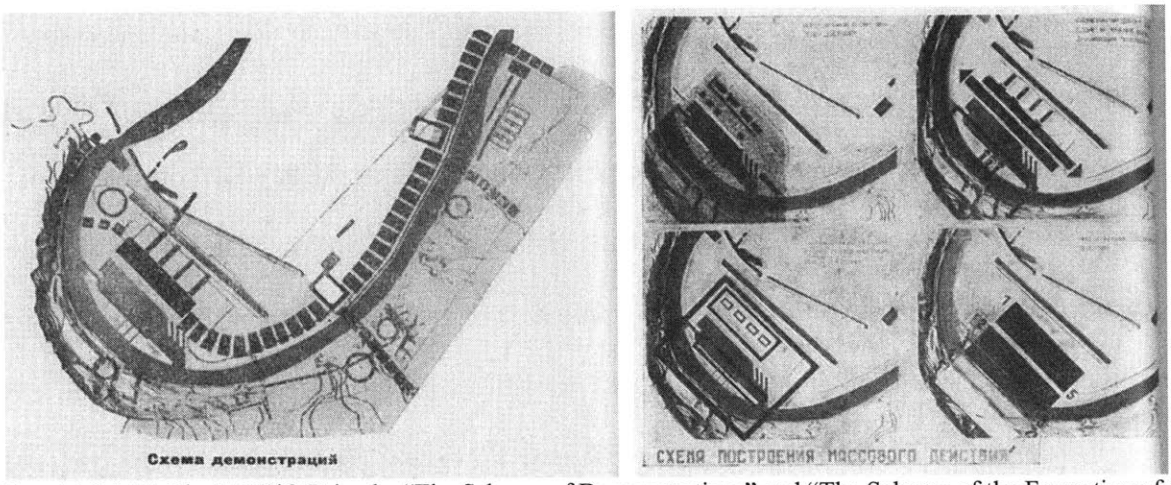
[574] Brigada ASNOVA [Viktor Balikhin, Militsa Prokhorova, Mikhail Turkus, P. V. Budo, Romual'd Iodko, Flora Sevortian], "ASNOVA. Dvorets Sovetov" [ASNOVA. The Palace of the Soviets], *Sovetskaia Arkhitektura* No. 4 (1931): 52-55 (52).

leaves of today's highways. Exiting Red Square, the demonstration divided into three streams, one flowing via Il'ich Alley,[575] a broad ceremonial prospect between Red Square and the Palace of the Soviets, another moving via the Kremlin, while the third occupying both banks of the Moscow River; all three finally reunited at the Palace of the Soviets. As a sign of a greatest distinction, awarded for revolutionary achievements and an overfulfillment of working norms, the columns that went through the Kremlin ascended two wide ramps to the spacious Lenin Hall of the Palace of the Soviets, then encircled in two flows the amphitheater of the presidium, greeted the delegates sitting in the Hall, then exited, at the height of 40 meters, to the Bridge of Shock Workers, and on two gentle ramps descended to the bank of the river to reunite with the flow of other demonstrating columns, which surrounded the Palace of the Soviets and then headed, along both banks of the Moscow River, to the TsPKiO, where the celebration culminated.[576]

Mass processions were also inscribed into the competition project for the Central Park of Culture and Leisure prepared by the TsPKiO Brigade, which included "The Scheme of Demonstrations" and "The Scheme of the Formation of a Mass Action" [*Schema postroenia massovogo deistviia*]. Here too, Il'ich Alley—the major ceremonial route of the city envisioned by Moscow authorities and accepted by architects and planners—connected the Palace with the park, passing through it as a bi-level parallel avenue that culminated at the Field of Mass

[575] Il'ich, Lenin's patronymic and a more familiar version of referring to the leader, was often used by Soviet propaganda.

[576] Brigada ASNOVA, "ASNOVA. Drovets Sovetov", 62-65.



Figs. 4.16-4.17. The TsPKiO Brigade, "The Scheme of Demonstrations" and "The Scheme of the Formation of a Mass Action," appended to the competition project of the Central Park of Culture and Leisure (1931).

Actions, described by the authors as "the basis of the design of the TsPKiO."[577] Entering through side gates, lesser demonstrating columns merged into the major one, which moved through Il'ich Alley. The spectacle continued on the water: in the Moscow River, in the Water Basin that stretched parallel to the Field, and on the beach. From the slopes of Vorob'evy Hills, one could enjoy the entire complexity of the mass action, which stretched across land, water, and air, creating a novel spatial unity that transformed the scale and shape of landscape.[578]

[577] Leonid Lunts, "Opisanie proektov general'nogo plana Tsentral'nogo parka kul'tury i otdykha Mossoveta" ["A description of projects of the general plan of the Central park of culture and leisure of Mossovet"], *Za sotsialisticheskii park*, 22-31 (24).

[578] While these grandiose demonstrations were to happen only on major holidays, smaller performances were to become a part of the TsPKiO's everyday life. They were to be staged near the entrance to the park, transforming a flower parterre designed by Mel'nikov into a "living newspaper"—constantly changing *tableau vivants*, exhibitions and performances that illustrated issues of international, national, city, district, and, finally, park significance. Leonid Lunts, *Parki kul'tury i otdykha* [*Parks of Culture and Leisure*] (Moskva: Gosstroiizdat, 1934) 215-218.

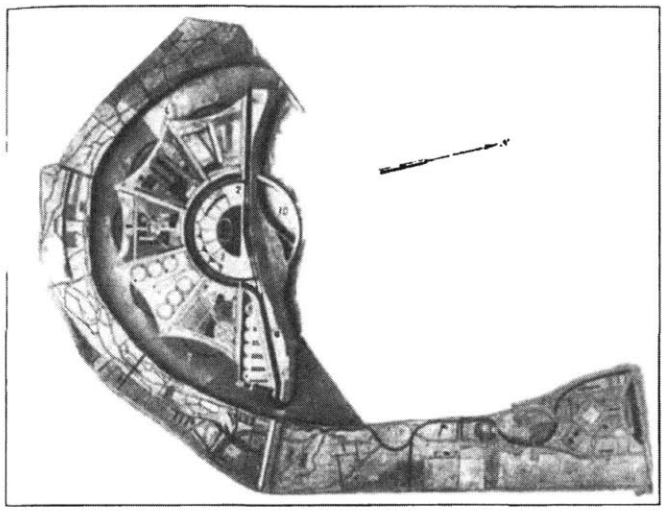


Fig. 4.18. Konstantin Mel'nikov, Park of Culture and Leisure, Competition Project, 1931.

The idea of a bi-level parallel avenue for mass processions reflected both ASNOVA's design for Red Square and the competition project of Konstantin Mel'nikov, in which alleys for mass demonstrations occupied most of the upper bank of the Moscow river, leading to the central Mass Action field in the middle of Luzhniki (the territory on the lower bank of the river). The two major mass procession alleys—the Alley of Technology and Exhibition Alley—were interwoven with each other to prepare "the flow of visitors for a U-turn during celebrations and political campaigns."[579] At the same time, the projects for bypassing alleys responded to Lunacharskii's old appeal to organize the masses by making them an object of their own spectacle—an appeal that was now, almost a decade after it was made, revived and given a visual shape. One of the 1929 publications, signed by a critic L. Roshchin, suggested to make the guiding principle of a demonstration that of "counter motion," which allowed engaging all the spectators into the demonstration:

> Let [demonstrating] columns face [demonstrating] columns along the entire length of streets. Only like this, and not in another way. Let enthusiasm multiply enthusiasm, joy [multiply] joy, sounds [multiply] sounds, colors [multiply] colors, political slogans [multiply] political slogans!
>
> If until now everybody participated in a mass spectacle, whose first-row viewer was the unorganized crowd on the sidewalks, then due to the counter movement of the

[579] Lunts, "Opisanie proektov general'nogo plana Tsentral'nogo parka kul'tury i otdykha Mossoveta," 30.

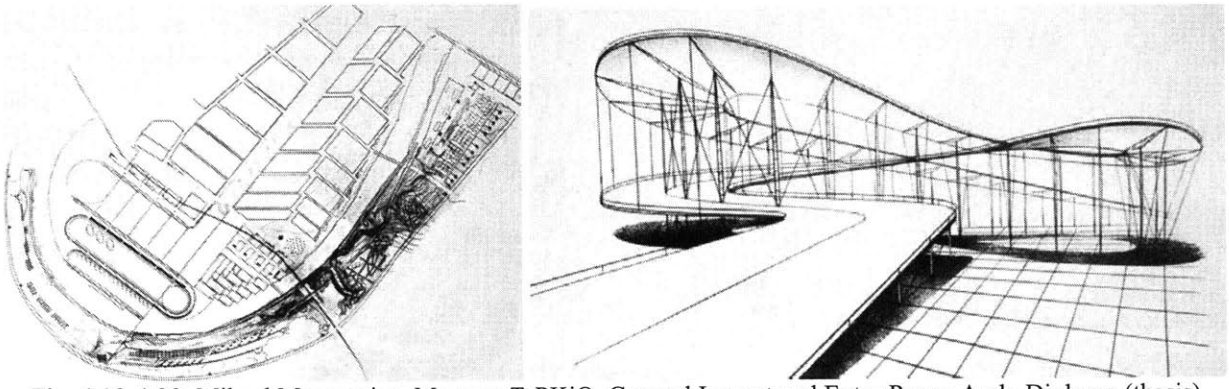


Fig. 4.19-4.20. Mikael Mazmonian, Moscow TsPKiO. General Layout and Entry Ramp-Arch. Diploma (thesis) project. VKhUTEIN, 1929.

> demonstrators everybody is simultaneously a participant and a viewer of an unseen mass spectacle of an exceptional rousing force.[580]

The most dramatic architectural representation of this concept was the diploma project of Mikael Mazmonian, another student of Ladovskii. For Mazmonian, the demonstrating mass itself, participating in a rhythmical play, became an element of the general spatial design of the park. Its movement began at the future Palace of the Soviets, passed through Il'ich Alley and the "rapport alley" [*alleia otchetnosti*] with tribunes located alongside it, from which the representatives of various public organizations reported to the passing organized masses about the work they completed during the year. The Rapport Alley led towards the entrance to the park—a triumphal arch designed as a broad ramp, ascending which the masses enjoyed a panorama of the park's entire territory. As Mazmonian explained, whereas the "triumphal arch of the past," expressing the concept of absolutism, was a self-sufficient element that dominated

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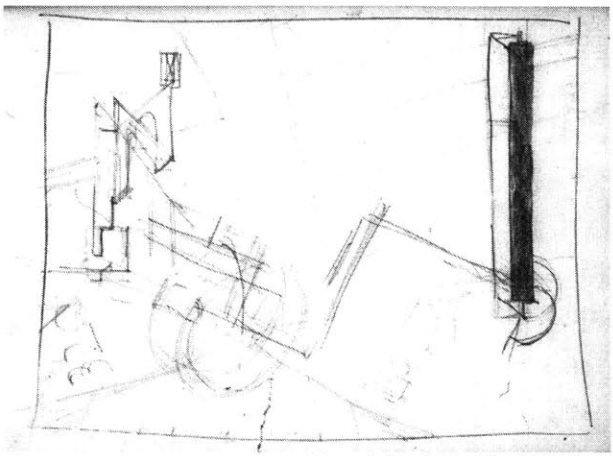
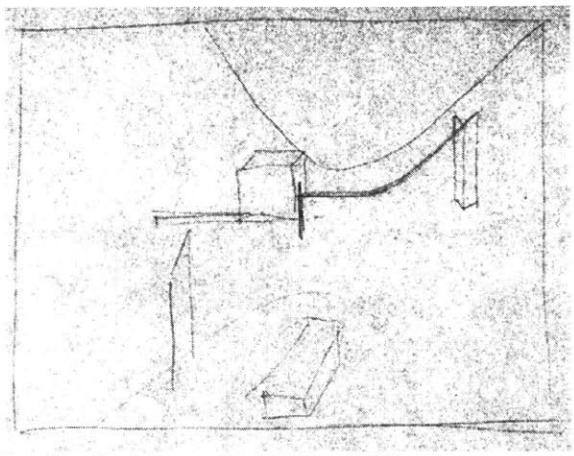
[580] L. Roshchin, "Iskusstvo massovykh prazdnenstv" ["Art of mass celebrations"], *Iskusstvo v massy* No. 5-6 (1929): 25-30 (28-29). Translation by the author. Russian original: «Пусть на всем протяжении улиц колонны навстречу колоннам. Только так, и никак иначе. Пусть энтузиазм множится на энтузиазм, радость на радость, звуки на звуки, краски на краски, политические лозунги на политические лозунги!
Если до сих пор все были участниками массового действия, на котором зрителем первых мест была неорганизованная публика на тротуарах, то при встречном шествии демонстрантов все являются и участниками и зрителями невиданного, исключительной подымающей силы массового действия».

over the spectator, the ramp-arch of the Park of Culture and Leisure, on opposite, was an element that did not have its full architectural completion without the participation of the masses. Upon entering the park, the demonstration went through the Rally Field, the Red Army House, the Sports International and Hydro-Aero-Port, finally culminating at the a large "green square" in front of the Lenin House, the architectural and cultural focus of the park.

Similarly, in the project of El Lissitzky, several arteries led from the city towards the park, merging at the end into one major thoroughfare that he called "the way to commune." The alley symbolically narrated the story of the evolution of humanity—in the aspects of society, labor, and culture—from the most primitive to the most advanced stages, providing the visitors with a "high charge" [*vysokaia zariadka*] before entering the park. Lissitzky also used Mazmonian's idea of the ramp-entrance to the park, suggesting to transform it into a "live architectural form." All the thoroughfares and alleys of the park were united into a single system, which—another idea the credit for which Lissitzky gave to Mazmonian—was located on several levels. Two sketches produced by Lissitzky for the TsPKiO (currently in the collection of the Russian State Archive of Literature and Arts) illustrate this idea. The first depicts a tall tower (possibly, the Palace of the Soviets) on the right and a triumphal-arch-shaped structure on the left, the two connected by a broken line that divides as it approaches the arch, perhaps indicating a double-level avenue, the upper level boldly rising on top of the arch. The other drawing illustrates two geometrical shapes, which could refer to the Palace of the Soviets and the park's entrance or to two park structures, connected by an elevated pathway going from the top of the tower to the opening in the middle of the cube-like structure on the left. Sophisticated movement of the visitors continued to organize Lissitzky's program beyond the park's entrance: the park itself became a "poetic work" whose content unfolded "from page to page" and "from chapter to

Figs. 4.21-4.22. El Lissitzky, Sketches for Moscow TsPKiO, c.1930.

chapter," reaching its apogee in the "finale." It was full of the play of water, color and light, which transformed it into a magic fanciful world.[581]

If spectacle—the spectacle of landscape and of the very demonstrating mass—and montage that united its "shots" together formed one key strategy of early-Soviet landscape design, on the physiological level the perception of a montage sequence was regulated by another strategy familiar to cinematography, rhythm. Rhythm conveyed the character, the mood of the scene, signaled of its importance, and psychologically prepared the viewer for the most dramatic moments. Traditionally, rhythm had been connected with emotional, subjective side of psyche. For Russian symbolist poet Andrei Bely rhythm was the expression of natural melodiousness of a poet's soul, art historian Dmitrii Nedovich argued that only rhythm expressed the talent and individuality of a master.[582] At the same time, rhythm found a more a pragmatic

[581] *Park Kul'tury i Otdykha* No.7 (1930): 3. See also: Kucher, *Park Gor'kogo*, 216-217.

[582] Andrei Belyi, "Simvolizm" ["Symbolism"], *Vesy* [*The Scales*] No.12 (1908): 36-41. Reprinted at Andrei Belyi, *Simvolizm kak miroponimanie* [*Symbolism as a World-Understanding*] (Moskva: Respublika, 1994) 334-338; Dmitrii Nedovich, *Zadachi iskusstvovedenia. Voprosy teorii prostranstvennykh iskusstv* [*The tasks of art studies. Questions of the theory of spatial arts*] (Moskva: Gosudarstvennaia Akademia Khudozhestvennykh Nauk, 1927) 80-92 (83).

and physiological interpretation, identified as a catalyst of physical strength and the reason for the success of Taylorist working methods: rhythm thus became "the most universal means of increasing productivity or, which is the same, for reducing the expenditure of energy," this working productivity also including the productivity of perception.[583] The notion of rhythm was, of course, borrowed from the theory of music, where in the 1920s it was elaborated by Boleslav Iavorskii, the creator of psychologizing theory of stop rhythm (*ladovy ritm*), for whom rhythm was a process of intellectual deconstruction, an analysis of physical forces that comprise a melody.[584] This definition came closest to the understanding of rhythm in architectural theory. There, the notion was elaborated by Moisei Ginzburg in 1922 in a book *Ritm v arkhitekture* (*Rhythm in Architecture*). In spite of his later functionalism, in 1922 Ginzburg was still able to observe, quite romantically, the rhythms planetary systems, the pulsation of human heart, and the circulation of blood, distinguishing rhythm as the essence of every architectural creation.[585] As for Iavorskii, for Ginzburg rhythm was an alternation of elements: projecting this definition onto psychological plane, he defined rhythmical sensation as a correlation between our perception at the given moment and the perception at the moment before. The aesthetic value of rhythm, for

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[583] Reitenberg, "Ritmicheskoe oformlenie reklamy" ["Rhythmical design of advertising"], *Sovetskoe iskusstvo* [*Soviet art*] No.3 (1928) 59-62 (59). Translation by the author. Russian original: "ритм универсальнейшее средство для повышения производительности или, что то же самое, для уменьшения затраты энергии». Speaking of advertisement, the author further remarked: "Rhythm increases productivity. A perception of advertisement is a work. Therefore, the productivity of this work can be increased, if the advertisement is designed rhythmically." Reitenberg, 62.

[584] Boleslav Iavorkii, „Osnovnye elementy muzyki" [„Main elements of musik"], *Iskusstvo. Zhurnal Rossiiskoi Akademii Khudozhestvennykh Nauk* No. 1 (1923): 185-194 (189).

[585] Moisei Ginzburg, *Ritm v arkhitekture* [*Rhythm in Architecture*] (Moskva: Sredi kollektsionerov, 1922) 7-9.

him, lied in a regulation of elements and their temporal movement, that is, in the regularity in the movement of these elements.[586]

Ginzburg's *Rhythm in architecture* opened with an epigraph taken from a Nietzsche's study of classical music: "Rhythm is a compulsion. It produces an irresistible desire of imitating, conforming to it; not only feet, but the soul itself (including the souls of gods) follows musical bar. This is why [ancient Greeks] by means of rhythm attempted to impel gods, acquiring power over them."[587] Rhythmical movement, indeed, has always been considered one of the instruments of hypnosis, and Le Bon saw in it one of the reasons of an extreme suggestivity of a demonstrating crowd. As other elements of Le Bon's crowd psychology, rhythm became positively appraised in Soviet Russia, where its regulation turned into a necessary element of demonstration design: "An introduction of visual spatial rhythms helping and facilitating the perception of the topic (rise, beat, falling) is necessary" stipulated a guide for the decorators of mass celebrations.[588]

The notions of rhythm and meter were especially important for spatial forms of architecture, whose major purpose was seen as an organization of movement. Following Ladovskii's connection of space with movement, the Rationalists became particularly interested in developing methods of orchestrating rhythm by architectural means. In 1936 Viktor

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[586] Ginzburg, *Ritm v arkhitekture*, 10-11.

[587] Friedrich Nietzsche, „Sämtliche briefe: kritische Studienausgabe in 8 Bänden," *Friedrich Nietzsche*. Ed. Giorgio Colli and Mazzino Montinari. Vol. 8 (München: Deutscher Taschenbuch Verlag, 1986) 1975-1984; Ginzburg, *Ritm v arkhitekture,* 9.

[588] Kuznetsova et al., *Oformlenie goroda v dni revoliutsionnykh prazdnenstv,* 66. Russian original: «Необходимо введение зрительных пространственных ритмов, способствующих и облегчающих восприятие темы (повышение, удар, понижение)».

Kalmykov, whom we have already seen filming his Avtostroj model, gave a talk on the "Architectural Problems of Parks" at the Cabinet of Planning of the Academy of Architecture, attempting to apply the Rationalist theory of composition to the design of parks of culture and leisure. Presented several years after the major principles of the park were laid out, Kalmykov's lecture summarized and reinstated them, offering practical solutions for their implementation in landscapes of various scales. For Kalmykov, as for his predecessors, the park remained first and foremost a space of mass processions, carnivals and parades. Evidently referring to Glan's guidelines, he declared the principle of "organized mass-ness" [*printsip organizovannoi massovosti*] defining his vision of a Soviet park. The technical means of achieving this goal Kalmykov saw in the theory of composition, which had been actively developed by ASNOVA during the previous years.

In the mid 1920s, the first generation of Ladovskii's students (Viktor Balikhin, Mikhail Turkus, Ivan Lamtsov, among others), by then already young professors of architecture, engaged in an ambitious project of elaborating a Rationalist theory of composition. The work was eventually published in 1934 as *Elementy arkhitekturno-prostranstvennoi kompozitsii* [*Elements of architectural-spatial composition*].[589] An Aristotelian system of compositional categories that the team prepared was based on a distinction between architectural elements (sensations), compositional means, and compositional types. The first comprised of form, size, location, mass, material (*faktura*), color, and chiaroscuro; the second were represented by relations, proportions, rhythm and meter; and finally, the three compositional types included frontal, volume, and

[589] Vladimir Krinskii, Ivan Lamtsov, and Mikhail Turkus, *Elementy Arkhitekturno-Prostranstvennoi Kompozitsii.* (Moskva: Gos. nauchno-tekhnicheskoe izd-vo stroitel'noi industrii i sudostroeniia Gosstroizdat NKTP SSSR, 1934). Being reprinted in the 1960s, it remained a key text book on architectural composition for the later generation of Soviet architecture students.

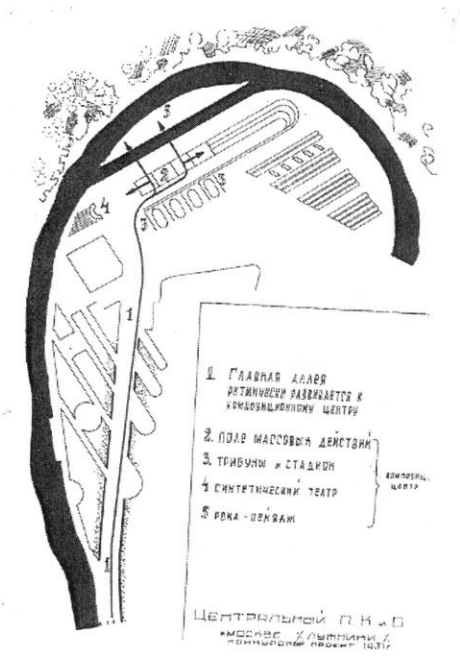
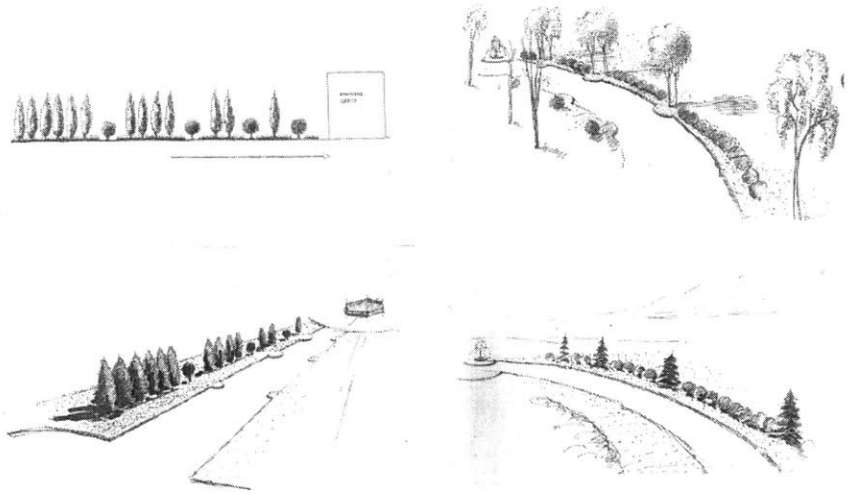


Fig. 4.23. Viktor Kalmykov, Moscow TsPKiO. Competition Project, 1931. 1. Main alley rhythmically develops towards the compositional center. 2. Mass Action Field. 3. Tribunes and Stadium. 4. Synthetic Theater. 5. River and landscape. 2-5—Compositional Center.

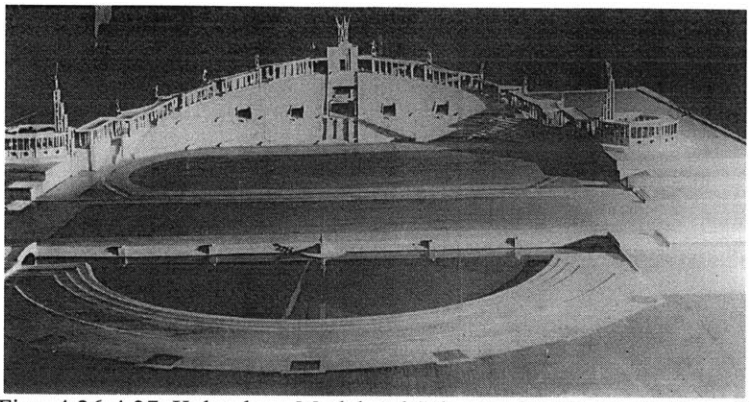
spatial composition. If relations and proportions primarily served frontal and volume compositions, rhythm and meter organized spatial ones. As a sequence of solids and voids, a rhythm presented an order, or—as the Rationalists called it—a row. As in the theory of music and poetry, the rows could be rhythmical or metrical, distinguished by repetition and regularity of elements and intervals: if rhythm dealt with their successive change (increase or diminution), meter was defined by their equality. Metrical rows presented a canvas, a spatial skeleton of a form, analogous to musical bars comprising the base of a melody, while metrical motives were compared to musical chords. Combinations of metrical rows expressed force, serenity, monumentality and scale. Rhythm, on the other hand, as a law of connection of spatial forms and elements, represented the culminating method of organizing spatial complexes, and could express lightness and dynamism. Combining various spatial elements (qualities) with the method of their organization, one could achieve an almost infinite variety of rhythmical rows. Moreover, a combination of rhythmical or rhythmical and metrical rows produced complex rows possessing new spatial qualities.

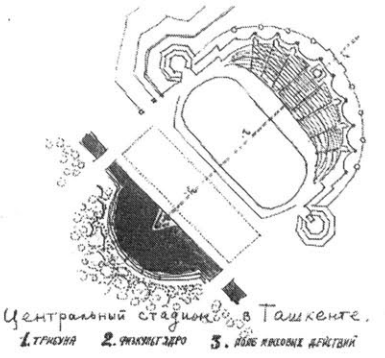
Applying these principles to the design of parks of culture and leisure, Kalmykov suggested to organize major thoroughfares that led from main entrances to the park's center—the vessels of mass circulation during celebration days—as rhythmical rows proportionally intensifying towards their endpoint. Rhythm stimulated the growing interest of visitors as they moved along the way, directed their visual perception, and prepared them for the park's best perspectives and viewpoints, which could be most fully enjoyed from the compositional center. A monotonous repetition of the same architectural element, Kalmykov explained, provoked boredom; moreover, a viewer was psychologically unable to hold in mind more than four or five metrically organized elements, and further repetitions remained unnoticed. Thus, architectural "generalizations" and accents on important parts of the composition were vital for the visitor's comfort and orientation. These rhythmical accents could be created with the help of vegetation, sculpture or small architectural forms; rhythm could also be conveyed by color (such as that of flowerbeds) that gradually changed from paler and colder hues in the periphery to brighter and warmer ones in the center. Smaller alleys, on the other hand, had to avoid an impression of long straight lines: even if they were topographically long, they could be visually made shorter by a division into segments that rhythmically intensified towards the center.



Figs. 4.24-4.25. Viktor Kalmykov, Examples of simple rhythmical groupings of vegetation, 1936.

A giant mass actions field with the "sport nucleus" (one or several stadiums) adjacent to it was to occupy the park's compositional center—its most important point from both an ideological and a architectural point of view. "Mass synthetic theater," an open-air amphitheater for giant-scale theatrical performances, likewise was to be situated nearby. Kalmykov believed that the architectural function of tribunes in the compositional center was not seating the visitors but rather organizing their perception. This perception was not limited to performance happening immediately in front of them; rather, it was to be constructed as a complex, synthetic aesthetic experience, in which the spectacle merged with the architecture of the park and the surrounding landscape and atmosphere. Thus, although an enclosed amphitheater could accommodate more viewers than amphitheaters of other shapes, Kalmykov disapproved of it because many of its seats offered oblique or otherwise disadvantageous viewpoints. More important than the considerations of economy was, for Kalmykov, the concern about perception: the tribune had to be visually connected with the landscape, so that the events on the field of mass actions could be beheld by everyone from the best possible viewpoint. Thus, Kalmykov argued for a large, wide-





Figs. 4.26-4.27. Kalmykov, Model and Scheme of Tashkent Stadium. 1 Tribune. 2. Sport Nucleus. 3. Mass Actions Field.

open amphitheater facing the stadium, a mass action field behind, and landscape in the distance.[590]

In Kalmykov's project for the Central Stadium of Central Asia in Tashkent, the tribune faced the "sport nucleus," which then merged with the Mass Actions Field with a river and a large semi-circular water basin; the perspective was enclosed by a picturesque view of Chimgan mountains in the distance; the spectacle was completed by a view of water channels, cascades, basins and fountains in the nearby park. Occupying the highest point of the park, the tribune faced east to allow the spectacle to be lit by gentle rays of the evening sun. To give the majority of the fifty thousand spectators the best possible perspective, the tribune's height rose towards the center, where the majority of seats was concentrated. The director orchestrated the performance from the central, highest point of the tribune, while his or her assistants helped from the towers of the side pavilions. Apart from having its pragmatic function, the tribune's unusual shape allowed to "dynamically design the façade by means of rhythmical organization." To add a dramatic effect to the composition, the tribune was divided by eight-sided columns that marked

[590] Viktor Kalmykov, "Arkhitekturnye problemy parkov (Doklad po pervomy etapu raboty nad temoi)" ["Architectural problems of parks (Report on the first stage of the work on the topic"], 1936, 2. Unpublished manuscript, Russian State Archive of Science-Technical Documentation, Samara.

the angles of fluted parts of the façade and proportionally increased towards the center. In the park, a similar rhythmic effect was achieved by a contrast of ball-shaped elms and elongated pyramidal poplars.[591]

Much like Zalesskaia's preoccupation with scenic effects in her project for Moscow TsPKiO or like Ladovskii's concern with picturesque perspectives offered in Kostino, Kalmykov's vision for the stadium in Tashkent and his principle of "organized mass-ness" were based on the aesthetics of the picturesque. A spectacular, dramatic effect achieved by a careful, cinematic unfolding of scenes and perspectives reminded of the principles of landscape gardening and cinematic montage, which also aimed at creating a deep emotional, psychological experience. With its shamanic, hypnotic power, rhythm helped to structure, direct and intensify this effect. And if at first sight such projects as ASNOVA's Palace of the Soviets or Mazmonian's Central Park of Culture and Leisure were much less romantic and contemplative, maintaining a semi-military tempo of marching demonstrating columns, in fact, their interpretation of the demonstrating mass as an object of its own spectacle—an interpretation rooted in Lunacharskii's romantic vision articulated during the War Communism years—returned them to the picturesque, asserting that an organization of masses was an organization of their perception.

[591] Kalmykov, "Arkhitekturnye problemy parkov," 7-8.

Organizing Individuality

The year 1928 marked not only the beginning of the First Five-Year Plan of economic development, but also that of a new cultural policy of the Soviet state—the proclaimed return to revolutionary ideals, which became known as "cultural revolution." The priority of this new policy was the development of a class-specific proletarian culture that had once been promoted by Bogdanov's *Proletkul't* but neglected during the 1920s. The return of revolutionism was illustrated by giant spectacles of Glan's celebrations, which occupied the park's space at state holidays and during important political events, but on an everyday basis the organization of visitors happened on a different, individual, level, organized around the notion of "culture." Like a mass procession, this individual work in the park served to "activate" the visitors, albeit with each of them individually. Operating on the collectivist principles of life, creativity, strength, and beauty, the park was to create the new collectivist subject as an active, conscious and independent participant of social, economic, and cultural life of the country.

As its name betrays, the "park of culture and leisure" intended to make the working class' leisure "cultured"—civilized and full of cultural and educational activities. Its initial program was envisioned by the chairman of the Moscow Soviet (Council) Konstantin Ukhanov as a place for a "meaningful leisure" of the working class, and elaborated, at Ukhanov's request, by Lunacharskii and, later, by Glan.[592] As she later recalled, the challenge that she faced lay in the development of a totally novel—socialist—form of mass recreation:

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[592] Konstantin Ukhanov, "V bor'be za kul'turu (K organizatsii v Moskve 'Parka kul'tury i otdykha')" ["In a fight for culture (On the organization in Moscow of 'Park of culture and leisure')"], *Pravda* No. 68 (21 March 1928). The program was subsequently developed in a resolution of the Moscow Committee of the Party, in a special decree of Narkompros, and in the materials of the All-Union Meeting on Parks of Culture and Leisure held by the Central Soviet of Trade Unions (VTsSPS) in 1933.

> "I knew from books that the art of parks and gardens has existed for many years. ... But these were, as a rule, the parks at royal residences or the estates of bigwigs. Simple people weren't allowed even to approach them.
> As for us, in the difficult circumstances of the 20s-30s we were to create the first in the country, new in form and content, park for simple Soviet people, their joy and leisure.[593]

According to Ukhanov, "the battle for culture" in the park was a part of the "cultural revolution" that was to "reconstruct the everyday life of a worker and a peasant, fill it with new content, adequate for the socialist essence of our construction."[594] Ukhanov, who first articulated its program in the Party newspaper *Pravda* in March of 1928, stipulated that the park had to include an entertainment complex, where a worker could find everything for a day outside of a factory: a cinema and a theater, a circus, radio, music, all kinds of sports—football, shooting, running, athletics, water and rowing sports, bathing, swimming, boating,—playgrounds, attractions, exhibitions, newspaper kiosks, dining rooms, cafes, milk and grocery stands.[595] As such, the park had to replace old, unorganized outdoor sites of workers' leisure: natural grooves and parks, where on days off workers and their families "walk or sit on the grass in a narrow circle of friends; [here] vodka and beer bottles abound, an accordion creaks, tipsy couples dance,

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[593] Glan, *Prazdnik vsegda s nami,* 46. Translation by the author. Russian original: «Я знала из книг, что многие века существует садово-парковое искусство. ... Но то были, как правило, парки при царских резиденциях или владениях сиятельных особ. Простой народ и близко к ним не подпускали.
Нам же предстояло в сложных условиях 20-30х годов создать первый в стране, новый по форме и содержанию парк для простых советских людей, для их радости и отдыха».

[594] Ukhanov, "V bor'be za kul'turu."

[595] Ukhanov, "V bor'be za kul'turu." The program was subsequently developed in a resolution of the Moscow Committee of the Party, in a special decree of Narkompros, and in the materials of the All-Union Meeting on Parks of Culture and Leisure held by the Central Soviet of Trade Unions (VTsSPS) in 1933. See, Resolutions on the Park of Culture and Leisure of the Board of Narkompros of RSFSR from 6 September 1931, 5 August 1932, and 4 September 1933; resolutions on the Park of Culture and Leisure of the Moscow Committee of All-Soviet Communist (Bolshevik) Party from 30 October 1930 and 37 April 1931; resolution on the Park of Culture and Leisure of the Secretariat of the Central Soviet of Trade Unions (VTsSPS) from 4 June 1932 and the proceedings of the All-Union Meeting on Parks of Culture and Leisure hold by the Central Soviet of Trade Unions (VTsSPS) in 1933 (all unpublished).

fortune-tellers move to and fro."[596] At first sight, the program of the park simply merged the programs of two German nineteenth-century types of workers' recreation spaces: *Volkspark* and *Lunapark,* both developed within a capitalist society. If the first served a moral and hygienic purpose, allegedly allowing urban proletariat to reunite with nature and thereby to counteract the corrupting influence of the city, the second—downplaying these achievements—indulged the city sensibility of the worker providing him with nervous stimulation and easy gratification. However, despite its capitalist predecessors, the new park was to change the practice of people's everyday life—to destroy the habits of oppressed, ignorant and uneducated exploited class and replace them with "culture" that had previously been accessible only to the upper classes.[597]

As Lunacharskii's second, "segregated," stage of mass celebrations, the park's daily life consisted of small-group discussions, debates, singing, and dancing. Moreover, the effect of the park was lasting because the workers were repeatedly subject to it: the park offered schools, courses, clubs and opportunities for education and physical and artistic development, which the visitors could use on a regular basis. In spite of dark and sarcastic pessimism of Il'f and Petrov, the position of the park's directorship on the role of personality was optimistic: Glan firmly refuted the accusations of inhumanity, oppression of individuality and utilitarian attitudes to personality, which were openly voiced by the writers on the pages of *Pravda.* She admitted that "one of the most common and most diligently repeated by the bourgeoisie fables about the

[596] Ukhanov, "V bor'be za kul'turu."

[597] V. V. Volkov, "Kontseptsia kul'turnosti. 1935-1938 gody. Sovetskaia tsivilizatsia i povsednevnost' stalinskogo vremeni" ["Concept of *kul'turnost'.* 1935-1938. Soviet civilization and the everyday life of Stalin's time"], *Sotsiologicheskii zhurnal* No.1-2 (1996) 194-213; V. V. Volkov, "The Concept of *kul'turnost'*: Notes on Stalinist Civilising Process," *Everyday Stalinism: Ordinary Life in Extraordinary Times: Soviet Russia in the 1930s.* Ed. Sheila Fitzpatrick (New York: Oxford University Press, 1999) 210-230; Catriona Kelly, V. V. Volkov, "Directed Desires: *Kul'turnost'* and Consumption," *Constructing Russian Culture in the Age of Revolution, 1881-1940.* Ed. Catriona Kelly and David Shepherd (Oxford: Oxford University Press, 1998) 291-313.

Soviet Union is the accusation of the Bolsheviks in a neglect of individuality, in a suppression of the interests of an individual person, in a forced collectivization of people in working, social and everyday life."[598] Instead of denigrating individuality, the park, Glan believed, offered wide opportunities for its development. Within a variety of clubs, sections and activities, everyone could find something for themselves and thereby develop their personalities, foster their talents and interests and stimulate their emotional attitudes, motivation and energy.[599]

As Marx was mostly preoccupied with the concept of labor and rarely used the word "leisure" in his writings,[600] in orthodox Marxism, it was defined simply as a time spent outside of factory work; its function in a capitalist society was limited to replenishing the proletarians' working energy, ensuring their biological reproduction, and creating a market for capitalist production.[601] The interpretation of leisure as rest found its place in the program of the TsPKiO, reflected in the multiple "zones of quiet rest" and "health zones," where people could sleep in the open air, stretch with a book, or simply rest at a bench. This practice turned to be quite effective: according to the Institute of Balneotherapy and the Scientific-Methodological Center of the Park of Culture and Leisure, a group of visitors to the villages of one-day rest, which was studied during three months, demonstrated a 10% increase in the productivity of labor.[602]

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[598] Betti Glan, *Udarno rabotat'—kul'turno otdykhat'* [*To work hard—to rest culturally*] (Moskva: Mospartizdat, 1933) 12. Translation by the author. Russian original: «Одна из наиболее распространенных и усердно повторяемых буржуазией басен о Советском союзе—это обвинение большевиков в пренебрежении к индивидуальности, в подавлении интересов отдельного человека, в насильственной коллективизации людей как в производственной и общественной жизни, так и в быту».

[599] Glan, *Udarno rabotat'—kul'turno otdykhat'*, 12.

[600] Chris Rojek, "Did Marx have a theory of leisure?" *Leisure Studies* Vol. 3, Issue 2 (1984): 163-174 (163).

[601] Rojek, "Did Marx have a theory of leisure?", 172.

[602] Glan, *Udarno rabotat' kul'turno otdykhat'*, 33.

However useful for the improvement of working productivity, this interpretation of leisure as an antonym of work did not dominate in the park's program, which followed, instead, a later, more Romantic interpretation of socialist-minded aesthetic thinkers such as William Morris. Morris's *News from Nowhere*, for instance, gives the notion of leisure a prominent role. It was leisure rather than work that determined the dignity and humanity of the person in the ideal London of the future. Leisure guaranteed happiness, pleasure, self-fulfillment, creativity, and—most importantly for Morris—beauty.

> The art or work-pleasure, as one ought to call it, of which I am now speaking, sprung up almost spontaneously, it seems, from a kind of instinct amongst people, no longer driven desperately to painful and terrible overwork, to do the best they could with the work in hand—to make it excellent of its kind; and when that had gone on for a little, a craving for beauty seemed to awaken in men's minds, and they began rudely and awkwardly to ornament the wares which they made; and when they had once set to work at that, it soon began to grow. All this was much helped by the abolition of the squalor which our immediate ancestors put up with so coolly; and by the leisurely, but not stupid, country-life which now grew (as I told you before) to be common amongst us. Thus at last and by slow degrees we got pleasure into our work; then we became conscious of that pleasure, and cultivated it, and took care that we had our fill of it; and then all was gained and we were happy. So may it be for ages and ages![603]

This idea of leisure was employed and developed by Lunacharskii and his co-thinkers, who believed that creativity, this essence of human-ness, was a fruit of leisure—not a passive idleness, but an active, meaningful and purposeful use of time spent outside of manual work. Leisure, for Lunacharskii, was the first condition of true freedom, and as such—of any progress of intellectual inquiry. Ultimately, it allowed the mind to act in the most economical way, in accordance with Avenarius's law of the smallest measure of force, described as the principle of true philosophy in *Philosophie als Denken der Welt gemäß dem Prinzip des kleinsten*

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[603] William Morris, *News from Nowhere* (1890). Multiple editions. Web. 2.7.2014. <http://www.marxists.org/archive/morris/works/1890/nowhere/nowhere.htm>.

Kraftmaßes [*Philosophy as Thinking About the World According to the Principle of the Smallest Measure of Force*].

> Σχολή [skholē]—ideleness is the mother of all sciences. With a class that did not have to struggle constantly for survival, there emerged a new mighty stimulus of human progress. Idle people could better develop their organs, from muscles to brain, because they could play: this was their freedom; the [Russian] word "slavery" [*rabstvo*] stems from the word "work" [*rabota*]: art and science were inaccessible for a slave [*rab*] [or] a worker [*rabochii*]. Play gave a tremendous strength to aristocracy, because it not only exercised the body and brain of the representatives of the upper classes, but gave them an opportunity to transfer a concrete struggle into the sphere of abstraction: they could combine, daringly generalize generations' experience, they could pose questions in the most general, abstract terms. Playing, the brain created itself new life-differences [*zhizneraznosti*], it strived for the correct thinking of the world in accordance with the principle of the smallest measure of force. While the person of a daily life struggled with thousands of different enemies, the mind of free thinkers, generalizing these different questions, created itself a phantasmal great enemy, namely an abstract question. In this form it was a cognitive life-difference, a disbalance of the brain's work, but a solution of such a question, a victory over it was nothing else but a satisfactory theory whose practical implementation did not solve all particular difficulties.[604]

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[604] Anatolii Lunacharskii, *Osnovy pozitivnoi estetiki* [*Foundations of Positive Aesthetics*] (Moskva-Petrograd: Gosudarstvennoe izdatel'stvo, 1923) 26-27. Translation by the author. Russian original: «σχολή —праздность— есть мать наук. С появлением класса, которому не необходимо было постоянно бороться за существование, явился новый могучий стимул человеческого прогресса. Праздные люди могли правильнее развивать все свои органы, начиная с мускулов и кончая мозгом, так как они могли играть,--в этом заключалась их свобода; слово «рабство» происходит от слова «работа»: рабу, рабочему искусство и наука были недоступны. Игра дала страшную силу аристократии, потому что она не только упражняла тело и мозг представителей высших классов, но дала им возможность перенести конкретную борьбу в поля абстракции: они могли комбинировать, смело обобщать опыт поколений, они могли ставить вопросы в самых общих, абстрактных терминах. Играя, мозг ставил себе новые жизнеразности, он стремился к правильному мышлению о мире согласно принципу наименьшей траты сил. В то время как человек повседневной жизни боролся с тысячами разных врагов, ум свободных мыслителей, обобщая эти маленькие вопросы, создавал себе призрачного великого врага, а именно абстрактный вопрос. В этой форме он был жизнеразностью познавательной, нарушением равновесия работы мозга, но решение такого вопроса, победа над ним являлась не чем иным, как удовлетворительной теорией, практическое применение которой разрешало все частные трудности».

With a change in official discourse in the 1930s, the obvious connection between the words *rab* and *rabota* ("slave" and "work") began to be disputed, for instance, in the work of prominent Soviet linguist Nikolai Marr. See, N. Ia. Marr, "Marks i problemy iazyka" ["Marx and the Problems of Language"], *Izbrannye raboty* [*Selected writings*]. Vols.1-5. Vol. 2 (Moskva-Leningrad: GSEI, 1936) 444-459 (557-559).

The notion of creativity occupied a central place already in the philosophy of Collectivism: for the Collectivists, it equaled nothing else than life itself, being its driving force, principle and ethic ideal.[605] For Lunacharskii, creativity was a higher way of adaptation of organism to the environment, a way accessible only to humans and thus presenting the essence of human character.[606] It was one of the key values during the first post-revolutionary years, figuring prominently, for example, in Gan's mass celebration proposal, which asserted a conscious creative work as one of the priorities of the project, whose scenario had to be written "by the masses themselves in the process of collective work and collective discussion." The International, the subject of the central performance, was interpreted as the origin of the international festival, this "first act of mass creativity on a world scale."[607] For Glan, too, the essence of energy that the park of culture and leisure aspired to evoke lay in creativity, which ensured the most enthusiastic, ingenious, clever and enjoyable production work. "Mobilization of the creative forces of the working class for the socialist construction—this is the main task of the park," was the motto she gave to the park's employees.[608]

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[605] Maxim Gorky, "Razrushenie lichnosti" ["The destruction of personality"], *Ocherki filosofii kollestivizma* [*Essays in the Philosophy of Collectivism*] (St. Petersburg: Tipografia t-va khudozhestvennoi pechati, 1909) 351- 403 (403).

[606] Lunacharskii, *Osnovy pozitivnoi estetiki*, 7.

[607] The Theatrical Department of the Commissariat for Education, Narkompros, "A proposal for the organization of the May Day festivities," 125.

[608] *Park Kul'tury i Otdykha* No. 1 (1931): 3.
Some authors have differently interpreted the nature of this energy. In his "annotated catalog of garden and park sculpture of Stalin's time," Russian cultural historian Mikhail Zolotonosov pointed to the allegedly sexual character of sculptures, which, representing youthful healthy bodies, appeared in Gorky Park in the second half of the1930s. These sculptures, according to Zolotonosov, as well as the multiple opportunities for viewing real semi-naked bodies at numerous sports, exercise, and bathing grounds, served to arouse sexual desire, which was then converted into the energy of work. Mikhail Zolotonosov, *Glyptokratoz: Issledovanie Nemogo Diskursa: Annotirovannyĭ Katalog Sadovo-Parkovoi Skul'ptury Stalinskogo Vremeni* [*Glypocratoz: A Study of Silent Discourse: Annotated Catalog of Garden and Park Sculpture of Stalin's Time*] (Sankt-Peterburg: Inapress, 1999) 8-19. Similarly, in her doctoral

As the essence of socialist leisure, creativity pointed to leisure's active and energetic character, which contrasted to its degraded quality in a capitalist society. As a playful preparation to future productive activity, it was inseparable from sport and health improvement. "Mass involvement of the workers into activities of physical culture with the purpose of restoring strength and energy spent at production" became an important element of the park's program.[609] When in August of 1934 Betti Glan discussed her projected presentation on the International Congress on Leisure and Recreation in the United States with Maxim Gorky, the writer selected and enthusiastically developed two of her points. First, "in the land of socialism, where all adult population capable of working works, leisure possesses special significance, because it is not only a rest from labor, but also for labor, its essence is in the restoration of working energy and simultaneously in spiritual [*dukhovnyi*[610]] enrichment." Leisure, thus, was a work—a work on one's personality, a development of one's moral qualities, knowledge and motivation. Second, "leisure serves to a harmonic development of personality, a detection of creative predispositions and abilities, not connected to a particular profession, which on a mass scale is possible only in a socialist country."[611] Unlike a specialized "professional" education, leisure, for Gorky,

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dissertation, Tijana Vujosevic argued that Soviet Taylorism contained "a peculiar eroticization of labor – a celebration of surplus energy invested into work. There is a fascination with the ecstasies in the merger of the organic and the inorganic in a pan-machinic world" (Tijana Vujosevic, "Architectures of the Everyday in 1920s and 1930s Russia." Ph.D. Dissertation. Massachusetts Institute of Technology, 2010, 98-99). A possibility of conversion of sexual into working energy, however, was not obvious for Soviet authorities. The minister of health Nikolai Semashko, for example, believed that sexual activity only devoured the energy that could otherwise be used for productive work. (David L. Hoffmann, *Stalinist Values: The Cultural Norms of Soviet Modernity, 1917-1941* [Ithaca: Cornell University Press, 2003] 92). For a discussion of this question see Kucher, *Park Gor'kogo*, 235-246).

[609] *Putevoditel' po Tsentral'nomu parku kul'tury i otdykha* [*Guide to the Central Park of Culture and Leisure*] (Moskva: s. l., 1930) 48. Russian original: «Массовый охват трудящихся физкультурными мероприятиями в целях восстановления сил и энергии трудящихся, потраченных на производстве».

[610] In this context, the word *dukhovnyi* can also be translated as "moral" or "intellectual."

[611] Glan, *Prazdnik vsegda s nami,* 106.

guaranteed the type of development that in the Soviet jargon of the time was called "polytechnic": it allowed a person to obtain a general understanding of historic, social, political and economic development of the world in order to understand one's personal role and one's function in it.[612] Dialectically rather than ontologically opposed, leisure and work supplemented each other and ensured each other's meaningfulness; in other words, in its best manifestations, leisure was nothing else but work. Glan explained:

> We believe that the essence of the park lies precisely in the fact that it is a *multi-sided cultural complex*, which gives a possibility to fulfill various cultural needs, which are especially vividly exposed in the conditions of free leisure. It is unquestionable that *the park must not continue working processes,* that it has to be *a pause in labor*, but the energy of the visitor to the park must be not switched off, but rather *switched to other kinds of activity*, which due to the very fact of voluntary switching are forms of rest from the previous work. This does not exclude, as one of the moments, one of the various forms of leisure and leisure-rest (sleep, rest in hammocks etc.). The line for abstract passive rest cannot comply with the tasks of communist education and the elevation of cultural level of million masses. The work in parks has to be organized in such a way that, encompassing with communist influence the working masses in the park, organizing their struggle for achieving current political tasks, it would simultaneously be leisure for the worker and would fulfill his cultural needs.[613]

The park itself, termed "the City of Cheerfullness" [*gorod bodrosti*], was juxtaposed to the „kingdom of boredom"—capitalist entertainment parks such as Coney Island, where, in Gorky's words, "the person is immediately stupefied, his consciousness squashed by its gleam,

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[612] Glan, *Prazdnik vsegda s nami,*106.

[613] Glan, "Za sotsialisticheskii park," 11. Glan's emphasis. Translation by the author. Russian original: «Мы полагаем, что сущность парка заключается именно в том, что он является *многосторонним культурным комбинатом*, дающим возможность удовлетворить разнообразные культурные запросы, которые выявляются особенно ярко в условиях свободного досуга. Бесспорно положение, что *парк не должен продолжать трудовые процессы*, что он должен являться *трудовой паузой*, но энергия пришедшего в парк рабочего должна не выключаться, а *переключаться на другие виды деятельности*, являющиеся уже в силу самого факта добровольного переключения формами отдыха от предыдущей работы. Это отнюдь не исключат, как одного из моментов, одной из разнообразных форм отдыха и отдыха-покоя (сон, лежание в гамаках и т.д.). Линия на беспредметный пассивный отдых не может соответствовать задачам коммунистического воспитания и поднятия культурного уровня миллионных масс. Работа в парках должна быть организована таким образом, чтобы, охватывая коммунистическим влиянием рабочие массы в парке, организуя их на борьбу за выполнение очередных политических задач, она вместе с тем являлась бы отдыхом для рабочего и удовлетворяла бы его культурные запросы».

thought expelled from it and the personality turned into a piece of the crowd."[614] Glan's language abounded with metaphors of energy and force: the proletariat—the young, rising class, full of youthful energy, which it eagerly spent for the transformation of the universe—a task with which only young giants could cope; cheerfulness, excitement, good mood, enthusiasm, perhaps even a little bit of youthful impatience differed the young, strong and healthy Soviet society from the sick and old society of the bourgeois West. The socialist park allowed the worker, while taking a break from work, "to release his good mood, his happy feeling of great victories"[615]:

> He is the builder of socialism, who within a short time rebuilt the boundless spaces of the sixth part of the world, who created Dneproges, Magnitogorsk, Uralmash, tractor factories and dozens of other industrial giants. Who, if not he—the victor—is to live the truly cultured, merry, cheerful life of a rising class! Where, if not in our country, the first in history country of the triumph of the best ideas of humanity, is possible such a multi-sided, full, full-blooded life, in which a happy labor is intercepted with a happy leisure![616]

The very appearance of the park had to convey this energizing cheerful atmosphere. Its creation became the task of brothers Vladimir and Georgii Stenberg, who were the chief artists of TsPKiO between 1928 and 1933. Former Constructivists, they had previously worked as stage-set decorators at Aleksandr Tairov's experimental theater, and it was this decoration work that attracted Glan's attention. Stenbergs' designs avoided propaganda clichés and concentrated,

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[614] Maxim Gorky, "V Amerike" [In America]," quoted in Glan, *Udarno rabotat'—kul'turno otdykhant'*, 15.

[615] Glan, *Udarno rabotat'—kul'turno otdykhat'*, 13.

[616] Glan, *Udarno rabotat'—kul'turno otdykhat'*, 13-14. Translation by the author. Russian original: «Именно здесь, на досуге, хочет рабочий дать выход своему хорошему настроению, радостному ощущению своих великих побед. Он—строитель социализма, перестроивший заново в кратчайший срок необозримые пространства шестой части мира, создавший Днепрогэс, Магнитогорск, Уралмаш, тракторные заводы и десятки других индустриальных великанов. Кому, как не ему—победителю, жить подлинно культурной, веселой, бодрой жизнью восходящего класса! Где, как не в нашей стране, первой в истории стране торжества лучших идей человечества, возможна такая многосторонняя, насыщенная, полнокровная жизнь, в которой радостный труд сменяется радостным отдыхом!»

instead, on creating a joyful and cheerful atmosphere. For the opening of 1931 summer season, for instance, the artists eliminated ubiquitous red banners from the park, replacing them with a colorful and light decorations: "...[The Park's] theaters, sport pavilions, library, children village, café painted in light hues—white to light-blue, beige, lemon-yellow (with colorful drawings of smiling children, running sportsmen, theater masks) now looked taller, lighter and more elegant. Beautiful wooden Caryatids by Konenkov[617] on the variety theater became more noticeable and relief, intricate gazebos and small stages—open and transparent." Everywhere in the park hung banners of various forms, sizes and colors: "long, vertical, fixed along poles and lamps; wide horizontal on some of the buildings; and small triangles flying on the wind on the steeples of shortish structures," they were light- or dark-blue, white, or orange, playfully contrasting the fresh green color of spring foliage. Particularly festive and magic the park looked at night-time, when the greenery, fountains, and sculptures where lit by a carefully organized illumination system.[618]

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[617] Sergei Timofeevich Konenkov (1874-1971)—renowned Russian and Soviet sculptor working in a Rodin-like style; between 1923 and 1945 lived in the United States.

[618] Glan, *Prazdnik vsegda s nami,* 47-48. Translation by the author. Russian original: «Его театры, спортивные павильоны, читальня, детский городок, кафе, окрашенные светлыми тонами—белым, переходящим в голубой, палевым, лимонно-желтым (с цветными рисунками улыбающихся детей бегущих спортсменов, театральных масок), выглядели теперь выше, легче и изящнее. Приметными и рельефными стали прекрасные коненковские деревянные кариатиды на эстрадном театре, ажурными и прозрачными—затейливые беседки и малые эстрады.

... была изобретена новая система оформления из флагов разных форм и размеров—длинных, вертикальным, укрепленных вдоль столбов и фонарей, широких горизонтальных на некоторых зданиях и небольших треугольников, развевающихся на ветру на шпилях невысоких сооружений.

Впервые были использованы в оформлении флаги других цветов: голубые, синие, белые, оранжевые. На фоне зелени они выглядели неожиданно и весело».

Fig. 4.28. Central Park of Culture and Leisure, Lilly-of-the-Valley Alley, designed by brothers Stenberg. Early 1930s.

Referring to Lunacharskii's early-1920s ideas, Glan termed her project of transforming and multiplying workers' energy "the principle of the activation of visitors" [*printsip aktivizatsii posetitelei*]. As one of the park's defining postulates, this principle stipulated that the visitors to the park were not passive spectators—on the contrary, they were co-workers who participated in the park's perpetual creation.[619] The activation of visitors was achieved by engaging them into conversations, political debates, collective singing, games, and physical exercises. The visitors were, for instance, invited to take part in the experiments of Timiriazev Biological Museum within the park and in the demonstrations of numerous machinery exhibited in the park's Village of Science and Technology.[620] However, its most important implementation the principle of the activation of visitors found in amateur art and music movement: according to Glan, mass singing, dance, rhythmic poetry reciting engaged thousands of people every day, providing clubs

[619] Glan, "Za sotsialisticheskii park," 10.

[620] Glan, *Udarno rabotat'—kul'turno otdykhat'*, 57-58.

and factories with an example of mass work.[621] As a result, a new profession emerged within the park, soon becoming one of the most important for its functioning: the so-called "mass organizers" [*organizator-massovik*] were several hundreds of volunteers who specialized in activating the masses. Like Glan herself, mass organizators were "young cheerful guys. They possess a wonderful quality, which gave them a deserved popularity—their special capacity to organize and lead the masses, to draw it into singing, dance, play, to give it a free and easy merry disposition."[622] The role of this mass work with the visitors at the Central Park of Culture and Leisure was such that it became possible for it to exist independently of its architectural form. Rather than being defined through landscape, the park was reconceived as its employees, mass organizers—the "touring brigades" [*vyezdnye brigady*] that reached those workers who avoided physically coming to the park. Appearing in factories before and after working hours and during lunch breaks, these brigades organized workers' meetings devoted to current problems of the factory, ridiculed drunkards, truants and slackers, and directed physical exercises, collective singing and dancing.[623]

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[621] Glan, *Udarno rabotat'—kul'turno otdykhat'*, 57.

[622] Glan, *Udarno rabotat'—kul'turno otdykhat'*, 58.

[623] Lunts, L B. *Parki Kul'tury i Otdykha* [*Parks of Culture and Leisure*] (Moskva: Gosstroiizdat, 1934) 80.

Fig. 4.29. An "agitprop" theater collective "Blue Blouse" performance at the Central Park of Culture and Rest. Stage-set by Vladimir and Georgii Stenberg, 1929.

In 1930, Lunacharskii defined and developed the principles of a novel science, antropagogy [*antropagogiia*], which would develop the ways of educating adults just as pedagogy dealt with educating children and youth with the purpose of "guiding human thought of groups and separate individuals in the direction of their rise, development, in the direction of giving their behavior a character that corresponds to the ideals of the ruling class, which in this case represents the interests of the **entire** humanity."[624] It was the purposes of antropagogy that art, as a powerful educational means—as "a force of agitation"—served.[625] The other's soul was not a thing in itself, Lunacharskii argued: on the contrary, the soul could be conquered and

[624] Lunacharskii, *Iskusstvo kak vid chelovecheskogo povedenia,* 6. Lunacharskii's emphasis. Translation by the author. Russian original: «возможность руководства человеческой мыслью групп или отдельных индивидуальностей в направлении их подъема, развития, в направлении придания их поведению того характера, который соответствует идеалам господствующего класса, в данном случае являющегося вместе с тем выразителем интересов **всего** человечества».

[625] Lunacharskii, *Iskusstvo kak vid chelovecheskogo povedenia,* 8.

changed in a consciously determined direction whose final end was "the ultimate and last, according to Marx, aim of any social movement—that is, an unfolding of all possibilities hidden in a human." This "primordial" task, the task that encompassed all other, was first and foremost psychological.[626]

As an outcome of antropagogy program, the parks of culture and leisure became a magic space where the ugly duckling of the old order turned into a beautiful socialist swan. The park gave the worker a chance to become a personality, encouraging, stimulating and supporting his or her hard work on individual development. "The park is a giant factory of the transformation of human consciousness, the rebuilding everyday life, a giant agitator, under the most immediate guidance of the party conducting a huge work of the political and cultural reeducation of millions," Glan echoed Lunacharskii's ideas.[627] Moreover, she conceived and elaborated the technology of this personal transformation in the park: "from accordion and guitar—to sophisticated symphony music; from primitive physical exercises—to ski-jumping from a 40-meter springboard and skiing after a motorcycle," "from a simple choral song—to the concert of the best masters of singing and stage," "from an amateur propaganda brigade—to a giant performance at the mass theater on the Smychka [Unification] Square."[628] The park had to use the tiny seeds of talent and interest that any person possessed to nourish them into a truly magnificent, unique tree. Everyone, independently of their level of culture, was to find

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[626] Lunacharskii, *Iskusstvo kak vid chelovecheskogo povedenia*, 29-30.

[627] Glan, *Udarno rabotat'—kul'turno otdykhat'*, 13. Translation by the author. Russian original: «Парк—огромная фабрика переделки человеческого сознания, перестройки быта, гигантский агитатор, под самым неподсредственным руководством партии выполняющий огромную работу по политическому и культурному воспитанию миллионов».

[628] Glan, *Udarno rabotat'—kul'turno otdykhat'*, 13.

something for their taste and interests: these interests could then be developed, skills—improved and knowledge—expanded.

In 1935, Glan's succeeded in inviting professional psychologists to develop and substantiate her ideas. Headed by a prominent Soviet psychologist, one of the founders of activity theory Aleksei Leontiev, the Psychological Brigade (that worked in the park alongside the Psychotechnical, Psychophysiological and Physiological brigades) of the All-Union Institute of Experimental Medicine conducted a 2.5-month-long research in the Park.[629] Glan's program of shaping human personality by external, often unconscious stimuli responded perfectly well to Leontiev's interest in Kurt Lewin's field theory, which postulated a foundational role of social environment for the formation of human psyche.[630] Leontiev reformulated Glan's program for the development of the visitors' personality as "the formula 'from—to': from the elementary, the superficial and the accidental to deeper, more developed and stable."[631] He called this type of personal development a "vertical movement," comparing it to the visitor's physical movement in

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[629] The brigade included: A. N. Rosenblium (head of research on the main territory of the park); L. I. Bozhovich (head of research of the visitors of Children's Village); N. N. Kaulina (research in the Aviation Laboratory); G. L. Rosengart (research in the Electrotechnical Laboratory); V. Kh. Kharkevich and N. A. Klevin (research of the flow of visitors to the Children's Village); A. A. Keldysh (research on the main territory of the park); professor A. N. Leontiev (the research head of the project).

[630] The key principle of field theory was described by Lewin (1890-1947) with a formula B = f(P, E), in which B stands for behavior; P—person; and E—environment. One of the first programs in social psychology and a precursor of behaviorism, Lewin's theory radically rejected the conception of human personality as given (shaped, for example, by childhood experience or genetic disposition). On Leontiev's interest in Lewin, see A. N. Leontiev, A. N. Rosenblium, "Psikhologicheskoe issledovanie deiatel'nosti i interesov posetitelei Tsentral'nogo Parka Kul'tury i Otdykha imeni Gor'kogo (Predvaritel'noe soobshchenie)" ["Psychological investigation of activity and interests of the visitors of Gorky Central Park of Culture and Leisure (Initial report)"], *Traditsii i perspektivy deiatel'nostnogo podkhoda v psikhologii. Shkola A. N. Leontieva* [*Traditions and perspectives of activity theory in psychology. School of A. N. Leontiev*]. Ed. A. E. Vojskunskii, A. N. Zhdan, O. K. Tikhomirov (Moskva: Smysl, 1999) 370-

[631] Glan, *Udarno rabotat'—ku'turno otdykhat'*, 13. Leontiev, 373. Russian original: «От первичного, от элементарного, поверхностного и случайного к более глубокому, развернутому и устойчивому».

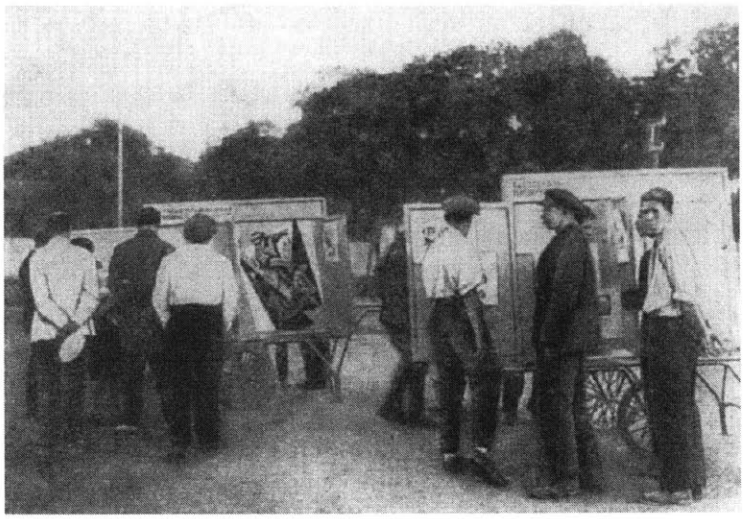

Fig. 4.30. Moving art exhibition in the Park of Culture and Leisure, 1934

the park. Thus ascending, for instance, from a curiosity in regards to an amusing physical phenomenon to the discipline of physics in general, or from a jump from "parachute tower" ride to serious parachute sport, the visitor was transformed into "a free and multi-sided, harmonically developed personality."[632] First and foremost, the park was for the psychologist "an institute, which in the condition of leisure **unfolds** [*razvertyvaet*] personality."[633]

The psychological experiment in the park was not a usual one because the park had too many visitors for a consistent observation of individual behavior and development. Thus the psychologists decided that, unlike a laboratory experiment, the research would test not a human, but the park. "As the subject of our research, we had to take things that reveal themselves in a moving flow; that is, we had in fact to experiment with a thing that we plunged into the human flow," explained Leontiev.[634] The thing became the object of Leontiev's experimental research, whereas the human played the role of a testing machine. The research problem that the psychologists thus faced was that of "awakening and developing needs, interests and skills during the process of activity under the specific conditions represented by the Park, first of all, as

[632] Leontiev and Rosenblium, 373.

[633] Leontiev and Rosenblium, 373.

[634] Leontiev and Rosenblium,375.

a system of **things.**"[635] It was the matter, the architectural design and the objects located in the park, which were to transform—without this transformation being registered by the visitor's consciousness—his or her personality. Therefore, the park's target were not those visitors who had a preexisting interest (that is, were already developed), but rather those who—reminiscent of Benjamin's distracted cinema viewer—came to the park without any particular reason, just to stroll or have rest: the park's centers captured them, attracted, made pause and explore their content and ultimately leave with a new interest and a decision to be back to explore this new interest deeper. According to Leontiev,

> ...A person does not come to the Park to become this or that or to receive such and such knowledge; he comes not to become a fully-developed member of society, but to have rest; thus, [our] task is to make him, having come to the Park and having freely surrendered himself to the Park—that is, being moved by the system of things, or, to be more precise, by the system of situations that the things create—to perform that program of development that forms the social-pedagogical task of the Park.[636]

Coming to the park without any plan or "cultural" purpose—in other words, in a state of distraction—the visitors tended to avoid walking long distances to reach particular points of interest, concentrating in the zones adjacent to the entrance and preferring to walk from one zone to the next.[637] To change this situation and attract them to educational centers, the psychoengineers developed the program of their "activation." For instance, in the course of an

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[635] Leontiev and Rosenblium, 373. Leontiev and Rosenblium's emphasis. Translation by the author. Russian original: «Проблема пробуждения и развития потребностей, интересов и умений в процессе деятельности в тех специфических условиях, которые представляет собой Парк, прежде всего—как система **вещей**».

[636] Leontiev and Rosenblium, 374. Translation by the author. Russian original: «Ведь человек приходит в Парк не для того, чтобы стать таким-то или получить такие-то знания; он приходит не для того, чтобы стать всесторонне развитым членом общества, а для того, чтобы отдохнуть; дело заключается, значит, в том, чтобы, придя в Парк и свободно отдаваясь Парку, т.е. будучи движимым системой вещей или, точнее, системой ситуаций, создаваемых вещами, он проделал бы ту программу развития, которая составляет общественно-педагогическую цель Парка».

[637] Leontiev and Rosenblium, 390.

experiment at the Aviation Laboratory in the Children Village, the psychologists succeeded in reducing the percentage of "specialists" (those children who came to the park with the purpose of improving their knowledge of model-making) from 65% to 9%, whereas the percentage of those who came to explore this unfamiliar topic and those who came without any particular purpose increased from 15% to 44% and from 17% to 43% respectively.[638] One of the most successful innovations of psychologists in the work of the Aviation Laboratory was the permission to engage ("to act" [*deistvovat'*], in Leontiev's terminology) with exhibition objects directly.[639] A possibility to engage with objects, Leontiev believed, allowed them to be transformed from "things-'disorganizers'" [*veshchi-'dezorganizatory'*] to the organizers of personality, thus helping the child to overcome a desire to appropriate, steal the object (thefts, the researchers admitted, frequently happened in the laboratory):

> Things can be liberated [...] only when the entire work of the laboratory is reorganized, only when a child has a different attitude to a thing, [an attitude] that can only be created by transforming it into an object of another need (in other words, a thing has to act not as an object that satisfies a tendency to simply exhibit one's activity, which is frequently disorganizing, not as an object satisfying tendencies of appropriation, but as an object satisfying a more significant, more mighty need that is organized in the laboratory itself.[640]

The interactive environment created by psychologists to encourage visitors' active, experimental exploration of objects pursued a twofold goal: first, to "realize a true vertical movement of the

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[638] Leontiev and Rosenblium, 406.

[639] Leontiev and Rosenblium, 409.

[640] Leontiev and Rosenblium, 410. Translation by the author. Russian original: «Можно освободить вещи, таким образом, только при условии реорганизации всей работы лаборатории, при условии иной установки ребенка к вещи, которая может быть создана единственно путем превращения ее в предмет иной потребности (иначе говоря, вещь должна выступать не как предмет, удовлетворяющий тенденции просто проявить свою активность, часто дезорганизаторскую активность не как предмет, удовлетворяющий тенденции к присвоению, но она должна выступать как предмет, удовлетворяющий более значительную, более мощную потребность организуемую в самой лаборатории».

Fig. 4.31. Military education at the Park of Culture and Leisure, before 1932.

visitors who came without particular intentions to the deepest points," and second, "in these deepest points we had to demonstrate a possibility of the maximum development of activity and interests of the visitors."[641] The vertical started at the most amusing, entertaining exhibit (the object that, in Kurt Lewin's terminology, created the strongest *Druck*) and continued to direct the child to other objects, which did not possess such an immediate attractive force.[642]

Based on his discoveries, Leontiev suggested that zonal (thematic) principle was optimal for a design of the park. According to the psychologists, zonal division allowed to create a system of verticals, which provided a visitor with a choice. The vertical, for Leontiev, was "not a narrow corridor"; rather, it was a system of horizontal moves: "It is rather a circle of two dimensions: that of enclosed circles [*po kontsentram*] and that of circumferences, from the

[641] Leontiev and Rosenblium, 402.

[642] Leontiev and Rosenblium, 412. For example, In their experimental project for an "aviation cycle" (a "vertically" designed line of challenges intended to evoke children's interest in aviation modeling) the psychologists applied several techniques of engaging the objects: unable to move parts of the "cycle" topographically, they used large airplane models situated at a distance from the laboratory to "capture" visitors and prompt them to move to the laboratory; they also connected the work of the laboratory with the flights of demonstration models; they reversed the usual principle of the laboratory's work: "not from bending a single twig to assembling a flying model, but from assembling a primitive model separated into five pieces—to technique, to bending the twig"; and finally, they "deepened" the work in the laboratory by offering children books to read and model drafts to copy. Leontiev and Rosenblium, 403.

attaction of one cycle to the attraction of another, third and fourth cycles, so that the vertical ascend can be started from any point of the horizontal row." [643]

By recommending zonal division in 1935, Leontiev, in fact, only legitimized architectural principle that had already been explored by Glan and suggested for the Park of Culture and Leisure by the participants of the 1931 competition. Glan, too, welcomed zoning in the Moscow TsPKiO as a method that helped the visitors to develop their individuality by structuring the park according to their interests.[644] A technique developed by urban planners in the late 1920s, functional zoning was immediately acknowledged as a major principle of modern urbanism. In the words of historian Eric Mumford, it was "the most significant theoretical approach of CIAM," which dominated its discourse from 1930 on.[645] It was implemented as a principle of the design of the park at the moment when urban planning (as the example of Ladovskii demonstrated) captured the minds of architects and became the foremost concern of Soviet architecture.[646] Never questioned by any of the modernists, functional zoning was equally accepted by the Constructivists, the Rationalists, and other Soviet architects. After the Soviet delegate to CIAM Moisei Ginzburg and the first director of the Office of Design and Planning Mel'nikov made zoning the guiding principle of their entries for the Moscow TsPKiO

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[643] Leontiev and Rosenblium, 424-425. Translation by the author. Russian original: «Таким образом, "вертикаль" не есть узкий коридор, но она предполагает и систему "горизонтальных" ходов. Это—скорее круг, имеющий два измерения—по концентрам и по окружностям, от занимательности одного цикла к занимательности другого, третьего и четвертого цикла, так что вертикальное восхождение посетитель может начать от любой точки горизонтального ряда».

[644] Glan, "Za sotsialisticheskii park," 18-19.

[645] Eric Mumford, *The CIAM Discourse on Urbanism, 1928-1960* (Cambridge, MA: MIT Press, 2000) 59.

[646] This was partially explained by the program of constructing new cities that was implemented during the First Five-Year Plan. The seminal for modernist town-planning debate between "urbanists" and "dizurbanists" about the principles of the "city of the future" took place in 1930.

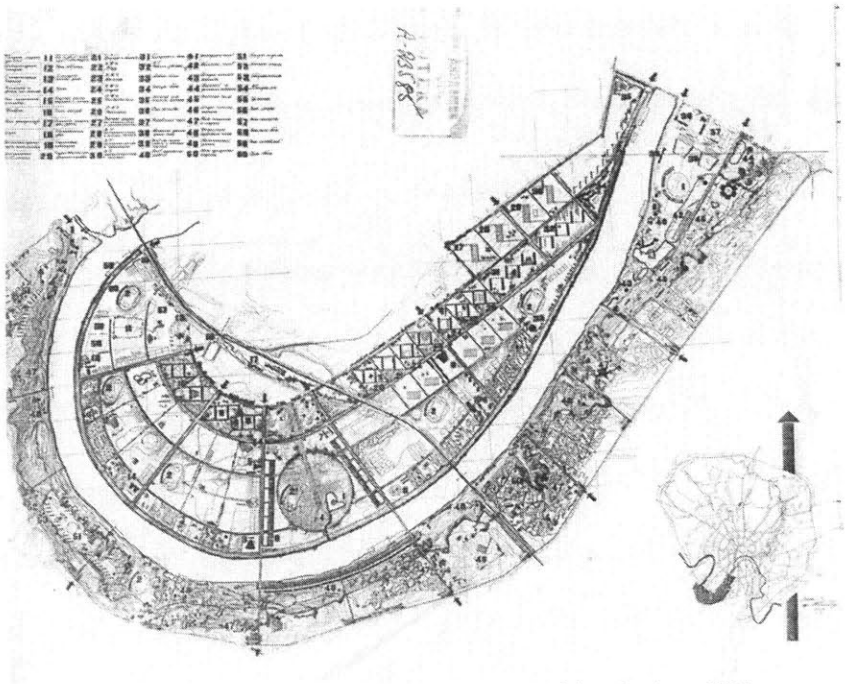

Fig. 4.32. Moisei Ginzburg. TsPKiO. Competition Project. 1931.

competition, zoning became a recognized principle of planning of Soviet public parks. In Mel'nikov's project, the center of the park was a stadium located at the low, Luzhniki, bank of the river, and the territory around it was divided by water channels into sectors, which corresponded to the functional zones of the park.[647] Ginzburg's project, on the other hand, divided the park into a series of long narrow stripes that, following the curve of the river and subdivided perpendicularly, housed the multiplicity of the park's sections.

If in both Ginzburg's and Mel'nikov's projects the zones were clearly separated from each other, Glan, asserting zoning as the principle of park design, mitigated it, asking architects to devote special attention to borders and the spaces between the zones to ensure "a correct transition of the worker from one activity to another."[648] Thus, the principle of zoning was

[647] Glan, „Za sotsialisticheskii park," 30.

[648] Glan, "Za sotsialisticheskii park," 18.

supplemented with—to use a term introduced by El Lissitzky--"the principle of switching." According to Lissitzky, who started the position of the director of the Department of Design and Planning of Moscow TsPKiO at the same time as Glan became the director of the park, the principle of switching presupposed an easy, unnoticeable and almost unconscious—stimulated by the surrounding environment rather than a conscious decision—movement of visitors between zones. Tacitly prompting them to explore all of the zones rather than limiting oneself to one of them, it contributed to the completeness of the park's "ideological effect": starting their movement at the zone of their particular interest, the visitors then found themselves in a neighboring area, from which they moved further, being subjected to a "combined effect [*kompleksnoe vozdeistvie*] of all forms of the park's work."[649] In 1931, collaboratively with his subordinate Andrei Korobov, Lissitzky designed a project for the park of culture and leisure in Sverdlovsk (today, Ekaterinburg) in the Ural Mountains, which they signed as the Brigade of Architects of the Administration of Moscow TsPKiO.[650] The architects declared that the project was based on the principle of "a gradual switching of the visitor from one activity to another, which enables a complex impact of all forms of park work."[651] The zones of similar topic or interest were situated next to each other, lacking a defined boundary: as a result, the visitors seamlessly flowed in between them, moving from one part of the park to another.[652]

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[649] Lunts, *Parki kul'tury i otdykha*, 265.

[650] *Soglashenie* [Contract] between Lissitzky and Ivan F. Ivanov, executive secretary of the committee for organization a park of culture and leisure in Sverdlovsk, 24 May 1931. Russian State Archive of Literature and Arts (RGALI), F.2361, Op.1, Ed. khr.55.

[651] Lunts, *Parki kul'tury i otdykha*, 265.

[652] Thus, zoo-ethnographic park, which was merged with the botanical garden, was situated near the park's entrance. To the south of the botanical garden was located Children Village; to the east of it lay the Popular-scientific and Exhibition zones. The geometric center of the park was occupied by the Field of Mass Actions and the stadium,

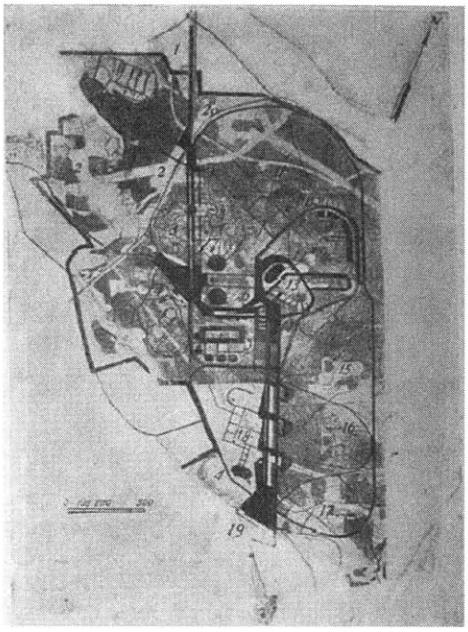

Fig. 4.33. El Lissitzky and Andrei Korobov, Sverdlovsk Park of Culture and Leisure. Project, 1931

The principle of switching was quickly adopted by other employees of the Office of Design and Planning (and, subsequently, those of Goszelenstroi). Arranging the zones and providing transitions between them became Militsa Prokhorova's main concern in her largest independent project of these years, the TsPKiO in Tula (1934), an old industrial city to the south of Moscow.[653] Prokhorova's scheme significantly enlarged a preexisting park, which now was to occupy 1.5 square kilometers and, to use Prokhorova's expression, could suck in 10% of the city's population (20-30 thousand people) on weekends

bordered by Spectacles in the north and the Sector of Defense Propaganda on the north-east. Nationalities Village occupied the space along the alley connecting the center of the park with the pond; bordering the physical education complex with a water station to the west. Finally, the territory to the east of the main alley was given to objects of rest: the zone of quiet rest and the houses of one-day and many-day rest. Lunts, *Parki kul'tury i otdykha*, 265.

[653] The implementation of the project was interrupted by the Second World War and never fulfilled completely; however, the realized parts (mostly the general layout) can be still seen today.

Fig. 4.34. Militsa Prokhorova, Zoning scheme for Tula TsPKiO, 1934.

and holidays.[654] Whereas zoning allowed an even distribution of the masses through the park, the circulation of visitors between the zones was made possible by their carefully arranged sequencing and by creating transitional spaces. The key to the effective functioning of the zonal system of the Tula TsPKiO was the "switching zone" [*zona perekliuchenia*], located at the main entrance to the park. There, the visitors received initial information about the park's zonal division and could develop their personal program of pastime and their route through the park. The other zones, each allocated to a specific activity or targeted for a certain group of visitors, formed segments of a circle around the central square, similarly to Mel'nikov's solution for the Moscow TsPKiO. Allowing for a fast connection between different zones, external circular avenue passed through the park's periphery, but the main way of connection between zones remained direct trespassing. To facilitate this connection, functionally similar zones were adjacent to each other, lacking defined boundaries and gradually merging together.[655]

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[654] Militsa Prokhorova, "Eskiznyi proekt planirovki parka kul'tury i otdykha v gorode Tule, i poiasnitel'naia zapiska k nemu" ["Preliminary project of planning of the park of culture and leisure in Tula, with an explanatory note"] April 1934. Unpublished manuscript. Archive of A.V. Shchusev State Museum of Architecture.

[655] Children's Village, where the youngest could swim and waddle in pools and play at playgrounds while their mothers rested in the shade of trellises and tents, bordered with the sector for school-age children, a miniature of the adult park with its own main house, stadium, theater, libraries, sport- and playgrounds. The Children Theater was to be located on the border with the "adult" zone in order to be accessible to those children who visited the park with their parents. Teenagers could also use the Popular-Scientific Sector, which hosted demonstration grounds, exhibition pavilions and "scientific-technical attractions." Continuing the exhibition program by a demonstration of military technology, the largest of the zones, the Military Sector, occupied the space to the west of the Popular-

Architecturalized by Lissitzky and exemplified in Prokhorova's Tula TsPKiO project, Glan and Leontiev's goal of developing individuality paradoxically contradicted the presumed oppression of individuality within a mass or a crowd condemned by Le Bon and other psychologists of masses. For Lunacharskii, Glan, and the architects who expressed their program, not individuality, but individualism was oppressed within an organized mass. For them, a true individuality, on the contrary, flourished within the collective, which alone created opportunities for its full development: individuality had nothing to do with behavior, thinking, interests or skills that were not beneficial for others—instead, it emerged where personal development contributed to the cumulative fund of societal adaptational mechanisms. The more strong, skillful and knowledgeable was its individual member, the stronger was the collective. Moreover, comradely attitude to each other, an interest in collaboration, and joy that belonging to a collective gave were also individuality's intrinsic parts—parts that enabled the organization of the masses. Creativity, enthusiasm, and cheerfulness were both stimulants and fruits of such personal development. "I sincerely congratulate you. You are the director of the factory of happy people," wrote Herbert Wells to Glan, impressed by his visit to Gorky park.[656]

Scientific Sector and was connected both to it and to the stadium, with which it shared the training agenda. Nearby stretched a row of military playgrounds, subsequently merging with the grounds of the abutting Sport Zone. An outdoor swimming pool surrounded by green walls divided the Sport Zone from the Zone of Health with its grounds for individual exercise. Next to it were a dancing ground and a stage for amateur performances, which bordered with the area of quiet rest in the western side of the park, where a network of narrow paths united occasional benches, gazebos and reading huts.

[656] Glan, *Prazdnik vsegda s nami,* 112.

Conclusion

In 1924, German designer Max Burchartz offered his concept of a Luna-park as a space of sensual experience, "an exercise for sensation and body," on the pages of the avant-garde journal *G.*[657] Similar to his Soviet colleagues, Burchartz actively relied on the techniques of "unconscious" sensual perception: illusions, contrasts of color or sound that prompted the visitor to choose this or that direction or pause at certain places. A modernist project that avoids mimetic representation (building a toboggan slide in the shape of a fake mountain instead of exposing its "structure and movement," was, for Burchartz, sentimental and lacked "any sense of vivacity") and celebrated bodily strength, youth and health, it is reminiscent the ethos of early Soviet projects for parks of culture and leisure. The latter, however, had a much more ambitious program: not liming their mission to entertainment and exercise of the body, Soviet parks aspired to build a modernist personality, to charge the visitor with energy, knowledge and optimism necessary for production of collective feats.

Material objects and environments were central instruments of the park's psychological impact, but more: they were animated, interpreted as active participants of the production process. Lunacharskii considered the design of everyday life objects to be one of the most important arts of his day, an art that possessed a great antropagogical power because it was capable of maintaining "the hygiene of perception."[658] Every object, square, street, house façade, room, all clothing had to "give a constant impulse, awaken his spirit, his consciousness, his

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[657] Max Burchartz, "Luna-Park," *G: Material zur Elementaren Gestaltung* No.3 (June 1934): 138-140.

[658] The expression "hygiene of perception" Lunacharskii borrowed from a leader of Constructivism Aleksandr Vesnin who used it when explaining the aesthetic program behind his Dneproges project. See: Lunacharskii, *Iskusstvo kak vid chelovecheskogo povedenia,* 17-18.

creative forces, a desire to truly live and fight, develop and move forward."[659] In Glan's mass processions and *féeries*, objects—tanks, tractors, or primus stoves—acted alongside humans as equally important parts of the show. The puppets and masks paraded during mass processions presented people in an unrealistic, comical, object-like guise. In Mazmonian's and Lissitzky projects for the Central Park of Culture and Leisure, architecture (the arch-ramp) dissolved during the most dramatic moments of mass procession, transforming the crowds into the true architecture of the park. Finally, Leontiev's psychological experiment put "things" rather than people at the center, interpreting the former as active agents of change and the latter—as passive objects of their work.

The blurring of boundaries between the organic and the inorganic, which Spyros Papapetros has recently identified at the core of modernist culture and historiography, exemplified by the animation of inorganic objects and abstract ornamentation, acquired a new significance in Gorky Park.[660] Central to the monistic culture of turn-of-the-century German art historic and aesthetic thought examined by Papapetros, the category of life likewise informed and infiltrated the TsPKiO's program: life was the ultimate end and the highest aesthetic and ethic value. However, if the inorganic forms at the center of Papapetros's discussion, such as crystals or snake ornaments, merely (although successfully) pretended to be animated, the living, truly animated objects in Moscow TsPKiO pretended to be lifeless in order not to produce an uncanny impression, to remain ostensibly unobtrusive, familiar, sometimes funny and always

[659] Lunacharskii, *Iskusstvo kak vid chelovecheskogo povedenia*, 20. Translation by the author. Russian original: «давало бы постоянный импульс, будило бы его бодрость, будило бы его сознание, творческие силы, желание действительно жить и бороться, развиваться и итти вперед».

[660] Spyros Papapetros, *On the Animation of the Inorganic: Art, Architecture, and the Extension of Life* (Chicago and London: University of Chicago Press, 2012).

easily perceived—in other words, in order not to trespass the boundaries of consciousness. By doing so, the animated objects could share their vital energy with the lifeless bodies of the park's first-time visitors, awakening their souls and transforming them into humans and individuals.

Whether or not this animation of the *organic* really happened and whether or not it was successful and moral are questions that remain beyond the scope of this dissertation. What I hope to have demonstrated here is, instead, the transformation of evolutionist vitalist ideas, through the aesthetics of collectivism, into a novel modernist synthetic genre of art, a genre which used form as its means and the viewers as its material. This vital energy evoked by the objects in the beholders was nothing else than creativity, which had to enable them for enthusiastic, productive—and conscious—work, a work that would perpetuate and strengthen the collective, asserting it as life's ultimate agent.

CONCLUSION

After a series of scheduled public defences of architecture graduates in May 1928 in the VKhUTEIN, only one was still pending as the author—Georgii Krutikov, a major collaborator at Ladovskii's Psychotechnical Laboratory—kept asking for more time to finish his project. Krutikov's notorious futuristic fantasy of a city suspended above the earth, *The City of the Future (The Evolution of Architectural Principles of City-Planning and the Organisation of Dwelling)*, included two parts, a theoretical and a visual. Entitled "A Study of a Moving Form" [*Issledovanie dvizhuschejsia formy*], the former consisted of sixteen illustrated tables, which juxtaposed the formal evolution of human dwellings with the evolution of the means of transport; the latter offered a graphic representation of "The City of the Future," in which the theoretical formal discoveries presented in the diagrams were embodied into a vision of a city. The defence finally occurred in June. As the eyewitnesses later recalled, an uncanny silence filled the room. The chair of the defence committee suggested posing questions, but nobody was willing to speak. At last, the representative of the City Infrastructure Department broke the silence: "How much time did you spend preparing the project, what is it based on, and how does it deal with the questions of sewer and water-supply?" Krutikov stoutly responded that it took him fifteen years to think about the problems that are solved in the project, and that the forthcoming progress of science and technology would definitely allow solving the latter problem. There were no other questions or commentaries. Relieved, the dean of the Architecture Department hastened to proclaim Krutikov an "architect-artist."

The scandal exploded later, when the newspaper *Postrojka* [*Edifice*] published a scoffing review entitled "Soviet Jules-Vernes. VKhUTEMAS Trains Dreamers instead of Builders; The Project of the Construction of a 'Flying City,'" in which it accused Krutikov of fruitless fantasising and losing touch with reality.[661] This quick, biased assessment of Soviet propagandist Levochskii seems to have had presaged the perception of Krutikov's project throughout the twentieth century—in Western academia as well as in Soviet criticism. Its echoes could be heard, for example, when Richard Stites discussed Krutikov alongside the cosmist philosopher Nikolai Fedorov (who dreamt of reviving the dead and resettling them in other planets) and science fiction novels of Alexei Tolstoi and Alexander Beliaev in a chapter devoted to futurology and science fiction, or when Milka Bliznakov connected Krutikov's thesis project with the expectation of a miraculous technological breakthrough due to an anticipated foreign technological help.[662] This reaction to Krutikov's project is characteristic of the interpretations of the goals and premises of Soviet modernist architecture by both contemporaries and subsequent historians.

A very different interpretation of *The City of the Future* was offered by Krutikov's VKhUTEIN pedagogues, who immediately intervened to protect the reputation of their student

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[661] N. Levochskii, "Sovetskie zhiul'-verny. VKhUTEMAS gotovit ne stroitelej, a fantazerov. Proekt postrojki "Letaiuschego goroda"' ["Soviet Jules-Vernes. VKhUTEMAS Trains Dreamers instead of Builders; The Project of the Construction of a 'Flying City'"] *Postrojka* [*Edifice*] 3 July 1928.

[662] Richard Stites, *Revolutionary Dreams: Utopian Vision and Experimental Life in the Russian Revolution* (New York: Oxford University Press, 1989) 170; Milka Bliznakov, "The Realisation of Utopia: Western Technology and Soviet Avant-garde Architecture," *Reshaping Russian Architecture: Western technology, Utopian Dreams*. Ed. William C. Brumfield (Cambridge and New York: Cambridge University Press, 1990) 145-175.

and explain the principles and intentions of architectural pedagogy in the institute.[663] In their response, published in the same newspaper, the Architecture Department claimed that Levochskii distorted the project's title by mislabelling what in fact was a "project for the solution of a new city" as a "project for the construction of a new city." Krutikov's defenders argued that his exploration of the 'future city' was in fact an example of scientific research, which, being conducted within the Architecture Department, by necessity had to acquire the architectural form of an urban project. Rather than being dissociated from reality, *The City of the Future* explored reality on a deeper level. What the Architecture Department claimed, was that Krutikov's "Flying City" was a not a science fiction, but a utopia, a word too painful for post-Revolutionary Soviet culture to be pronounced openly.[664]

Two alternative (and conflicting) utopian paradigms can be discerned in *The City of the Future*: the Romantic, post-Revolutionary utopia as a hope and the proto-totalitarian utopia as a rigid social organisation, associated with the economic politics of the First Five-Year Plan. The latter paradigm—condemned by dystopian novels, Cold-War political criticism, and the philosophies of freedom and democracy—is more familiar today. Moreover, it is more specifically connected to architecture, which it treats as a material means of organising and controlling hierarchical human relationships. Lewis Mumford, for instance, argued that the first cities appeared around religious centres as materialised utopias, earthly incarnations of divine

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[663] Presidium of Architecture Department, professional and student bodies of VKhUTEIN, "My gotovim ne 'sovetskikh zhiul'-vernov.' Arkhitekturnyi fakul'tet na dolzhnoi vysote" ["We do not prepare 'soviet jules-vernes.' Department of Architecture [is] up to the mark"] *Postrojka* [*Edifice*] 12 August 1928.

[664] See, for instance, the distinction between 'utopian' and 'scientific' socialism suggested by Engels. Friedrich Engels, *Herrn Eugen Dühring's Umwälzung der Wissenschaft* (Leipzig, Druck und Verlag der Genossenschafts-Buchdruckerei, 1878).

order and harmony; the earliest utopias, on the other hand, such as Plato's *Republic* and Aristotle's *Politics*, were modelled after real, material cities of the ancient world.[665]

For Mumford, both a city and a utopia were defined by their rationality, their order and regulation—as such, both of them were nothing but social machines, in which the inadequacy of technological knowledge was replaced with a complex social order:

> By royal command, the necessary machine was created: a machine that concentrated energy in great assemblages of men, each unit shaped, graded, trained, regimented, articulated, to perform its particular function in a unified working whole. With such a machine, work could be conceived and executed on a scale that otherwise was impossible until the steam engine and the dynamo were invented.[666]

If an interpretation of ancient cities as social machines might be problematic, the identification of utopia with production and machine-like rationality certainly applies to an idea of a modern city and modernity in general, as epitomised in the project of Enlightenment as the "Age of Reason" with its architectural 'revolutionary' utopias.[667] An ideal modern city, such as Ledoux's *Salines de Chaux* (1775-1778), was structured to optimise industrial production, organisation and control of the workers, who were identified with their social function.

Represented by Krutikov, 'The City of the Future' consisted of two parts: the vertical one (the residential zone) was suspended in the air, while the horizontal one (the production zone) was sprawled on the surface of the earth. Both parts were immobile and were tightly connected with each other, betraying the fixation on the relationship between life and production within a city, which was so characteristic for modernist urbanism. Despite its title, Krutikov's city

[665] Lewis Mumford, "Utopia, the City and the Machine," *Daedalus* Vol. 94 No.2 *Utopia* (Spring 1965): 271-292.

[666] Mumford, 284.

[667] Emil Kaufmann, *Three Revolutionary Architects: Boullée, Ledoux, and Lequeu* (Philadelphia: American Philosophical Society, 1952).

possessed the static, proto-dystopian regularity of a machine. Similarly, most of the projects examined in this dissertation—such as Maliarstroi's program of increasing working productivity with the help of color and Glan's concept of activating the masses through material objects—embodied this vision of society as a machine, in which everyone had a fixed place and function, and whose performance architecture, as a supportive armature, enabled and improved. This machine's human parts were cast through a work with subjectivity, programmed for collaborative work leading to a common goal. Soviet designers redefined themselves as social engineers, who participated in the modernist project of developing a new man, mentally and physiologically suitable for an integration into the totality of the economic apparatus of the state.

This dehumanising utopia of the First Five-Year Plan was very different from the utopias that originated during the New Economic Policy. Given that the Party preferred more realistic solutions to economic problems, these earlier utopias evolved in, and were restricted to, artistic circles. Unlike the static and rigid utopia-as-social-machine, in which any change would bring the loss of balance and disjunction of parts, theirs was a dynamic understanding of utopia as inspiration. Some twenty years later, this definition was made famous in his *Principle of Hope* (1938–1947) by Ernst Bloch, who claimed that "[t]he imagination and the thoughts of future intention … are utopian, ... not in a narrow sense of the word which only defines what is bad (emotively reckless picturing, playful form of an abstract kind), but rather in fact in the newly tenable sense of the forward dream, of anticipation in general."[668] Hope, for Bloch, was the emotion that allowed people to go forward, that gave them a direction, supported people on the way and ultimately made the future become a reality.

[668] Ernst Bloch, *The Principle of Hope.* Vol. 1 (Cambridge, MA: MIT Press, 1986) 15.

Similarly, for Boris Arvatov, the purpose of a valuable, revolutionary—materialised [*oveschestvlennaia*], to use Arvatov's own term—utopia was an organisation of creative power. In a 1923 issue of a Constructivist journal *LEF* [*Levyi Front Iskusstv*; *Left Front of Arts*], Arvatov suggested a utopia that pointed to the direction which a society had to take, igniting souls and inspiring minds:

> Manilov practiced utopias in his leisure time: [it would be nice to build] a bridge, and on the bridge... etc.[669] His utopias were born passively. The economist Sismondi created another sort of utopia—he was fascinated with the past. Fourier was also a utopian, and his utopia was revolutionary. Breaking into the heart of the historic process, this utopia becomes a material power that organizes creativity. And then we name it with a capital U—Utopia. Because everyone knows that Marx would not have been possible without Fourier and his likes.[670]

Unlike Engels's "scientific socialism," Constructivist utopia did not have to be or even look realisable. Another major *LEF* critic, Osip Brik, argued that it was precisely the manifested impossibility that made a utopia valuable. In 1923, commenting on a precursor of Krutikov's utopian project, "A City on Leaf Springs" by a Constructivist Anton Lavinskii, Brik argued that only the unrealisable can ascend above the mundane, entering the immaterial theoretical realm.

> I... assume... that this is unbuildable. The same questions arose with regard to Tatlin's monument. I assume that both cannot be built, that engineers would smile at these discussions. Taking this into consideration, I insist that Lavinskii's work possesses an immense significance precisely because it, first of all, arouses questions. ... And if Lavinskii did not drive this utopia to the end, then this is a certain error of his, because he decided to connect somehow the utopia with today. This is his fault. It would have been

[669] Manilov is a protagonist of Nikolai Gogol's novel *The Dead Souls* (1842), who entered Russian culture as a symbol of fruitless wishful thinking.

[670] Here and throughout the rest of the article the translations from Russian are provided by the author. (Arvatov 1923: 64)

more utopian if he had driven the idea of the liberation of the human from the immobile and untransformable city to the end...[671]

Ladovskii, too, did not remain indifferent to Lavinskii's idea to supply houses with leaf springs. However, he found it unsatisfactory—insufficiently utopian. Articulated in the course of the discussion, Ladovskii's notion of artistic utopia, in the same way as Arvatov's concept of reified utopia, stimulated movement into the future and pointed to its possible directions. Unlike the more ambitious Arvatov, however, who was thinking in terms of society as a whole, Ladovskii confined himself and his disciples to the sphere of designed form. It was the absence of formal artistic thinking in Lavinskii's project that dissatisfied Ladovskii.

> The idea that is clear both from the drawings and from the descriptions, possesses a utopian character... As for the houses on leaf springs, I don't see anything utopian here in what deals with the technical realisation. ... Utopia is beauty and an interesting flight of fantasy—and Lavinskii's project does not possess this interest. Is it interesting to lift a house? I can invent even better: make a house electromagnetic and it wouldn't need material support. I will use electromagnets to transport cargoes... All these are inventions in technology, not in art or architecture... As for technology, I can go even further. I can imagine my house flying and solve the sewer problem... This is a technologically-based utopia. But what I am interested to hear is not technological, but other—artistic—challenges. Technology: I can draw whatever I wish. I can take a number of balloons and suspend a house from them. Everything is moving, every chair... Would my idea be any worse? Give me an artistic utopia, the principles of which I don't see here...[672]

Ladovskii's own architectural theory, his vision of economical and rational architecture was such an artistic utopia. But this utopia, as well as Matiushin's theory of expanded vision, and Gan's activated masses, strove for an integration into a great utopia of the Soviet Revolution, eager to sacrifice its autonomy for an active role in the building of a new society. This sacrifice

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[671] Osip Brik, Speech at the discussion of Lavinskii's project in INKhUK, 1923. Quoted in: Selim Khan-Magomedov, *Anton Lavinskii* (Moskva: Russkii avangard, 2007) 56-59 (56-57).

[672] Nikolai Ladovskii, Speech at the discussion of Lavinskii's project in INKhUK, 1923. Quoted in: Khan-Magomedov, *Anton Lavinskii*, 59-61 (59-60).

was accepted, and towards the late 1920s, artistic life in the USSR became increasingly integrated in the system of state bureaucracies.

As well as Krutikov's utopia, the subject-construction utopias of Maliarstroi, the Park of Culture and Leisure, and all the other utopias of the First Five-Year Plan became obsolete in the early 1930s, when the transition to Second (1933-1937) Five-Year Plan marked the completion of the creation of the material base for industrial production. The ensuing cultural turn, known in Western historiography as "The Great Retreat," was seen by many as a *de facto* abandoning of socialist aspirations and a tacit return to tsarist politics.[673] For art and architectural historians, this turn signified a violent assassination of the avant-garde by the state. Indeed, what was needed now was not a social organisation of people that could replace the non-existing machinery, but people's hard, devoted work on the machinery that had just been acquired. The new totalitarian utopia was the one of real, productive labour. This new utopia required new aesthetics, new protagonists, and new bureaucracies.

Alongside other independent architectural groups, ASNOVA and ARU were dissolved after the infamous decree of the Central Committee of the Communist Party "On the Reconstruction of Literature and Artistic Organizations" (1932) which replaced them by the Union of Soviet Architects, fully controllable by the Party.[674] Meanwhile, all research and academic work (including doctoral programs in architecture) was consolidated within the All-

[673] Nicholas Timasheff, *The Great Retreat* (New York, E. P. Dutton & Company, Inc., 1946).

[674] More on that, see D. S. Khmel'nitskii, [Dmitrij Chmelnizki], *Arkhitektura Stalina: psikhologiiā˜i stil'* [*Stalin's Architecture: Psychology and Style*] (Moskva: Progress-Traditsia, 2007). Translated into German as *Die Architektur Stalins* (Stuttgart: Ibidem-Verlag, 2007); and Danilo Udovič˙ki-Selb, "Between Modernism and Socialist Realism: Soviet Architectural Culture Under Stalin's Revolution from Above, 1928-1938," *Journal of the Society of Architectural Historians* Vol. 68, No. 4 (2009): 467-495, and his *The Evolution of Soviet Architectural Culture in the First Decade of Stalin's 'perestroika'* (Trondheim: [s.n.], 2009).

Union Academy of Architecture, created in 1933. Without its venue, Ladovskii's research became impossible, and the architect concentrated on his work as the head of the First Architectural Workshop of the Narkomat (ministry) of Health, supervising planning hospitals and sanatoria. Although he continued teaching at Moscow Architectural Institute throughout the 1930s, his method was widely condemned as a dangerous formalism:

> But the Formalists did not prepare proletarian architects. With their formal and abstract method, [with their] orientation on eternal laws of biology and physiology they uprooted the future architect from the social tasks of architecture, from class struggle, from political and propagandistic tasks of art, they directed him to seek for abstract solutions, for groundless fantacizing, a separation from real practice etc.[675]

Ladovskii died, defeated and stigmatized, in 1941—the same year saw the death of Lissitzky, who abandoned architectural work and spent the 1930s as a designer of Soviet journals, propaganda posters, and exhibitions.

Likewise, the program of Maliarstroi soon went out of favor with the state officials, who reoriented the trust from psychological experiments towards the technology of dyes and the methods of their application. The last (#5-6) issue of *Maliarnoe Delo* in 1931 opened with an editorial "Reorganization of the journal 'Maliarnoe Delo'—towards production." The first point in the list of changes was "to change the program of the journal *Maliarnoe Delo,* eliminate an independent section on art, cut the architectural material and, most importantly, strengthen the

[675] A. I. Mikhailov, *Gruppirovki Sovietskoi arkhitektury [Factions of Soviet Architecture]* (Moskva: Izogiz, 1932) 50. Translation by the author. Russian original: «Но формалисты и не готовили пролетарских архитекторов. Своим формально-абстрактным подходом, ориентацией на вечные законы биологии и физиологии они отрывали будущего архитектора от социальных задач архитектуры, от классовой борьбы, от политически-агитационных задач искусства, они направляли его на поиски абстрактных решений, беспочвенное фантазерство, отрыв от реальной практики и т.д.».

role of industrial topics."[676] Indeed, starting with that issue, articles on spatial and aesthetic properties of color mostly disappeared from the journal. This turn seemed to be an immediate result of the debate on the role of wallpainting, which the Maliarstroi team effectively lost. In August 1931, the Stalinist critic Amov closed the debate by condemning not only Kostin's program of transforming wallpainting in the new abstraction, but the existence of wallpainting as a discipline, returning it to the old position of unskilled craftsmanship:

> The deliberations of this unlucky Sancho Panza "about the strength of the effect of these or those color harmonies, combinations and contrasts" upon human psyche is completely scholastic and bourgeois. Paint in and of itself means very little or almost nothing. Paint has to serve the means of an artistic expression of a concrete idea or, if not—a means of covering the walls of buildings. But in this last case one does not necessarily have to be an easel painter—a wallpainter-craftsman is enough. He does not have another vision of the role of proletarian artist—in fact, he cannot even have it, as he is completely imbued with the idea that the proletariat is incapable of highly artistic creativity.[677]

For several years after, Maliarstroi continued to exist as a purely technical organization. But although *Maliarnoe Delo* was reformatted as a technical journal, its publication ceased in 1932. In 1935 Maliarstroi was renamed into *Gosotdelstroi* (an agglutination referring to State Decorative Construction)—a direct reversal of the development of the Bauhaus Wallpainting Workshop from that of Decorative Painting. As wallpainting was returned to the domain of an

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[676] "Reorganizatsia zhurnala 'Maliarnoe Delo'—litsom k proizvodstvu" ["Reorganization of the journal 'Maliarnoe Delo'—towards production"], *Maliarnoe Delo* [Wallpainting] No.5-6 (1931): 7-8 (7). Translation by the author. Russian original: «изменить программу журнала Малярное Дело, упразднить самостоятельный художественный отдел, сократить материал архитектурного порядка и, главное, усилить в нем удельный вес производственных тем».

[677] I. Amov, "Taktika klassovogo vraga na izofronte" ["The tactics of class enemy on the art front"], *Za proletarskoe iskusstvo* [*For a Proletarian Art*] No.8 (1931): 7-10 (9). Translation by the author. Russian original: «Рассуждения этого неудачливого Санчо Панса о силе воздействия тех или иных красочных гармоний, сочетаний и контрастов» на психику человека—насквозь схоластично, буржуазно. Краска сама по себе значит очень немного или почти ничего не значит. Краска должна служить средством художественного выражения конкретного образа, а если нет—средством для покрытия стен домов. Но в последнем случае не обязательно быть художником-станковистом, достаточно быть маляром-ремесленником. Другого представления о роли пролетарских художников у него нет, да и быть не может, ибо он насквозь пропитан мыслью о том, что пролетариат не способен к высокохудожественному творчеству».

unskilled labor, Gosotdelstroi lost commissions and concentrated its work on the development of synthetic wallpainting dyes.[678] In 1937 Gosotdelstroi's then-head Vasilii Kotov was subjected to repression.[679] In 1938, Borchert's wife Sofia Matveeva, who had worked in Maliarstroi since 1930, had to leave the organization because of the lack of commissions. In 1939, Borchert followed her path only to be incarcerated shortly after and executed as a German spy in 1944.

Subjected to political repression was also Betti Glan, exiled to Siberia in 1937. Criticized in the Il'f and Petrov satirical story and elsewhere, her vision of the Park of Culture and Leisure as a giant subject-molding factory was left aside. Instead, Soviet parks now served for entertainment and for the satisfaction of desires that were previously considered undeveloped and low. Thus, a subjective map of an ordinary user of Gorky Park of Culture and Leisure in Khar'kov (a city in the east of contemporary Ukraine) became reduced to an alley connecting the entrance to the dancing area with kiosks selling drinks and benches alongside this alley.

> At that time Gorky Park was very popular with Khar'kov residents, and on weekends and in the evenings it attracted crowds of the strolling public. It had everything that one could wish for rest: two dancing grounds, "green theater," summer movie theater, laughing pavilion (labyrinth of distorting mirrors), concert stages and even a parachute tower. There was an entrance charge only in the evenings, when the artists were performing on the concert stages. [...] At the end of the central park alley there was a dancing ground where the brass band played. Here everybody could dance – they weren't charging additional fees for it. The second dancing ground was located in the heart of the park: jazz was played there, and the entrance was not free. It had a nice stage, projectors and garlands of colored light bulbs. But we would rarely go there – this was the place for elite youth, which could not only pay for everything, but also dress well. Sometimes, when I

[678] In the 1930s, Gosotdelstroi published *Color book* (among the authors' collective were Erich Borchert, artist Vladimir Favorskii, chemist, head of the color laboratory A. Revo, the new head of the Design Office L. Zhivotovskii), who from 1500 colors selected 300, which they recommended for use and provided their recopies and characteristics. See "Na vystavke Gosotdelstroia" ["At the Gosotdelstroi Exhibition"], *Arkhitekturnaia Gazeta* [*Architecture Newspaper*] No. 13 (1937), 4.

[679] Vasilii Afanas'evich Kotov (1885-1937) was a Soviet Party functionary, the head of Gosotdelstroi in 1935. He was arrested in 1936 and executed in 1937.

> happened to be nearby, I enviously watched the gaudy crowd swirling with jazz sounds and thought: What are these people? Where do they come from? After all, the famine just ended!"[680]

For the memoirist, the park was primarily a space for dancing in the company of his friends: traditional forms of socializing and recreation have reclaimed its space.

In the mid-1930s, complex, scientifically developed forms of integrating human subjects into a great social machine proved to be uneconomical and abandoned. Organizational utopia was replaced by an industrial one—a utopia based on direct repression, violence, and forced labor. However, the echoes of artistic and organizational utopias remained heard throughout the rest of the Soviet period and beyond. Transmitted through Ladovskii's students and associates (Vladimir Krinskii, Mikhail Turkus, Liubov' Zalesskaia, Ivan Lamtsov, and others), his vision of architecture as space remained, and still remains, the dominant pedagogical model at the Moscow Architectural Institute, where courses on "architectural composition" are still designed as a program of mastering an expression of formal qualities. Moreover, the idea that reality is construed psychologically was reflected by the so-called Socialist Realism—an official, approved, and the only allowed "style" of Soviet art, literature, music, and architecture.

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[680] Pavel Andreevich Orlov, *Puteshestvie v stranu kotoraia nazyvaettsa 'zhizn',' ili 'Mashina vremeni'* [*A Jorney to the Country Called 'Life,' or 'Time Machine'*]. Web. 8.5.2014. <http://samlib.ru/o/orlow_p_a/puti.shtml>. Translation by the author. Russian original: «В то время парк имени Горького был очень популярен у харьковчан, и в нем скапливалось много гуляющей публики в выходные дни и по вечерам. Там было все, что только можно было придумать для отдыха: две танцплощадки, "Зеленый театр", летний кинотеатр, павильон смеха (лабиринт кривых зеркал), концертные площадки и даже парашютная вышка. Вход в парк был платный только по вечерам, когда на концертных площадках выступали артисты. [...] В конце центральной аллеи парка была оборудована танцевальная площадка, где играл духовой оркестр. Здесь могли танцевать все желающие, - денег за это не брали. Вторая танцплощадка была расположена в глубине парка, там играл джаз, и вход на нее был платный. Площадка была оборудована красивой эстрадой, прожекторами и гирляндами разноцветных лампочек. Но, мы редко бывали там, - это было место сбора элитной молодежи, способной не только за все платить, но и хорошо одеваться. Иногда, оказавшись вблизи, я с завистью наблюдал за расфуфыренной, вертящейся под звуки джаза толпой молодых людей и думал, что же это за люди, откуда они взялись? Ведь недавно был голод!»

According to Boris Groys, Socialist Realism was not a mimetic representation of reality, but rather a depiction of the potentially albeit not yet actually present: "Socialist realist mimesis, then, attempts to focus on the hidden essence of things rather than on phenomena. [...] Socialist realism is oriented toward that which has not yet come into being but which should be created, and in this respect it is the heir of the avant-garde, for which aesthetics and politics are also identical."[681] Like Krinskii's sky-scraper, which rather than being physically high depicted an idea of height, Socialist Realism operated with artistic images and impressions.

Groys believed that the difference between avant-garde and Stalinist culture lay in the fact that while the avant-garde, exemplified by Constructivism, exposed the methods of its work (or, in Shklovskii's terms, layed bare the device), Stalinist culture strove "to shape it [consciousness] in the desired mold by controlling its environment, its base, its subconscious."[682] As this dissertation strove to demonstrate, "the avant-garde" no less consciously than Stalinism exploited the subject-making potential of the unconscious: while artistic utopia subjected it to a scientific analysis, the organizational utopia strove to put it to a productive use. It was left to industrial utopia to mold consciousness through direct propaganda.

[681] Boris Grois, *The Total Art of Stalinism: Avant-garde, Aesthetic Dictatorship, and Beyond* (Princeton, N.J.: Princeton University Press, 1992) 51.

[682] Grois, *The Total Art of Stalinism*, 44.

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Fig. 1.1. Arkadii Shaikhet, *Il'ich's Light Bulb* (1925). Botino Village, Moscow region. Collection of the Moscow House of Photography.
http://fotofond.ria.ru/images/54948/57/549485712.jpg

Fig. 2.1. Illustration from Ernst Mach, *Beiträge Zur Analyse Der Empfindungen* (Jena: G. Fischer, 1886), p.14.

Figs. 2.2-2.3. Vladimir Krinskii. "Sky-Scraper in Moscow." Reproduced in *Izvestia ASNOVA* (1926, No.1), p. 5.

Figs. 2.4-2.5. Nikolai Ladovskii, "Construction" and "Composition" (1921). Museum of Modern Art, Thessaloniki. Reproduced in S. O. Khan-Magomedov, *Ratsionalizm (Ratsio-arkhitektura) "Formalizm"* (Moskva: Arkhitektura-S, 2007), p.107.

Fig. 2.6. V. A. Petrov. "Parallelepiped." Abstract assignment on the exposure of form (VKhUTEMAS, 1920). Reproduced in *Izvestia ASNOVA* (1926, No.1), p.5.

Fig. 2.7. Nikolai Ladovskii. Geometrical analysis of Petrov's project. Reproduced in *Izvestia ASNOVA* (1926, No.1), p.4.

Fig. 2.8. Mikhail Korzhev. "Grain elevator." Industrial assignment on the exposure and expression of form (VKhUTEMAS, 1922). Reproduced in S. O. Khan-Magomedov, *Ratsionalizm (Ratsio-arkhitektura) "Formalizm"* (Moskva: Arkhitektura-S, 2007), p.165.

Fig. 2.9. Arkadii Arkin. Abstract assignment on exposure of physic and mechanical properties of form (mass and balance) (VKhUTEMAS, 1922). Reproduced in *Arkhitektura: raboty arkhitekturnogo fakul'teta VKhUTEMASa, 1920-1927* (Moskva: Izd-vo Vkhutemasa, 1927), p.2.

Fig. 2.10. Unknown author. "Restaurant above the sea." Industrial assignment on the exposure of physical and mechanical properties of form (mass and balance) (VKhUTEMAS, 1922/23). Reproduced in El Lissitzky. *Russia: An Architecture for World Revolution* (Cambridge, MA: M.I.T. Press, 1970), p. 77.

Fig. 2.11. Tatiana Druzhinina. "Expressive Spatial Composition," Abstract spatial assignment (VKhUTEIN, 1929-1930). Collection of the Canadian Center for Architecture. PH1998:0014:394 http://svrdam.cca.qc.ca/ZooMI/Default.aspx?obj=PH1998:0014:394

Fig. 2.12. Nikolai Ladovskii. Liglazomer. Reproduced in Georgii Krutikov. "Arkhitekturnaia nauchno-issledovatel'skaia laboratoria pri Arkhitekturnom fakul'tete Moskovskogo Vysshego Khud.-Tekhnich. Instituta". *Stroitel'naia promyshlennost'* (1928, No. 5), p. 372.

Fig. 2.13. Nikolai Ladovskii. Ploglazomer. Reproduced in Georgii Krutikov. "Arkhitekturnaia nauchno-issledovatel'skaia laboratoria pri Arkhitekturnom fakul'tete Moskovskogo Vysshego Khud.-Tekhnich. Instituta". *Stroitel'naia promyshlennost'* (1928, No. 5), p. 372.

Fig. 2.14. Nikolai Ladovskii. Uglazomer. Reproduced in Georgii Krutikov. "Arkhitekturnaia nauchno-issledovatel'skaia laboratoria pri Arkhitekturnom fakul'tete Moskovskogo Vysshego Khud.-Tekhnich. Instituta". *Stroitel'naia promyshlennost'* (1928, No. 5), p.374.

Fig. 2.15. Nikolai Ladovskii. Oglazomer. Reproduced in Georgii Krutikov. "Arkhitekturnaia nauchno-issledovatel'skaia laboratoria pri Arkhitekturnom fakul'tete Moskovskogo Vysshego Khud.-Tekhnich. Instituta". *Stroitel'naia promyshlennost'* (1928, No. 5), p.373.

Fig. 2.16. Nikolai Ladovskii. Prostrometr. Reproduced in Georgii Krutikov. "Arkhitekturnaia nauchno-issledovatel'skaia laboratoria pri Arkhitekturnom fakul'tete Moskovskogo Vysshego Khud.-Tekhnich. Instituta". *Stroitel'naia promyshlennost'* (1928, No. 5), p.374.

Fig. 2.17. El Lissitzky. "Chelovek—mera vsekh portnykh." Reproduced in *Izvestia ASNOVA* (1926, No.1), p.8.

Fig. 2.18. Nikolai Ladovskii. Student Profile Form (VKhUTEIN, 1929). Reproduced in *Arkhitektura i VKhUTEIN* (1929, No.1), p.3.

Fig. 2.19. Psychological Laboratory of the N. K. Krupskaia Academy of Communist Education. Psychological profile of general giftedness. Tests edited by P. A. Rudik. Series A2. [P. Ia. Rudik, ed. *Psikhologicheskii profil' obshchei odarennosti. Seriia A2* (Moskva: Gudok, n.d.)].

Fig.2.20. Psychophysiological Laboratory of the Ia. M. Sverdlov Communist University. Forms for the results of psychotechnical tests. Reproduced in P. A. Rudik. *Umstvennaia odarennost' i ee izmerenie* (Moskva: Izdatel'stvo Kommunisticheskogo Universiteta, 1927), p.113.

Fig. 3.1. Aleksandr Lushin. "Practicum of color theory." Student exercise book, (VKhUTEIN, 1928-1930.) A sketch of twelve color tones (after Ostwald). The Getty Research Institute, Special Collections.

Fig.3.2. Aleksandr Lushin. "Practicum of color theory." Student exercise book, (VKhUTEIN, 1928-1930.) A sketch of harmonic triades of chromatic colors. The Getty Research Institute, Special Collections.

Fig. 3.3. Mikhail Matiushin and Maria Ender. The change of color shape and color background in time, with the eyes closed (1930s). State Museum of the History of St. Petersburg.

Fig.3.4. Mikhail Matiushin, *Spravochnik po tsvety. Zakonomernost' izmeniaemosti tsvetovykh sochetanii* [*Color Handbook. Laws of Variability of Color Combinations*]. Moskva: Gosudarstvennoe izdatel'stvo izobrazitel'nykh iskusstv, 1932. Band 3, Table 17.

Fig.3.5. Nikolai Travin. Khavsko-Shabolovskii residential complex. Plans of exterior coloration, 1928. Reproduced in *Von Utopie Zu Utopie: Russische Architektur, 1919-1939 : Katalog Zur Ausstellung Vom 30. April Bis 31. Juli 1996* (Cologne: Galerie Alex Lachmann, 1993), p. 70.

Figs. 3.6-3.8. Antokol'skii's three schemes for the repainting of Moscow. Reconstruction by A. V. Efimov (1978). Reproduced in A. V. Efimov. "Formirovanie tsvetovoi sredy goroda." *Arkhitektura SSSR* (1978, No. 9), p. 7.

Fig. 3.9. Viktor Balikhin. "Color Rows." Museum of the Moscow Institute of Architecture.

Fig. 3.10. Employees of the Maliarstroi Office of Design. Photograph (1931). Reproduced in *Erich Borchert v Rossii/Erich Borchert in Russia* (Moskva: Izdatel'stvo im. Sabashnikovykh, 2008), p.21.

Fig. 3.11. Machine for a pneumatic spraying of paint (Maliarstroi, 1930). Reproduced in P. Katichev. "Khudozhnik-stroitel'." *Iskusstvo v massy* (1930, No. 9 [17]), p.14.

Fig. 3.12. Industrial Painting Company, Montreal. Advertisement. Reproduced in *Maliarnoe Delo* (1931, No.4), p.59.

Fig.3.13. Fere's ergograph. Drawing from S. S. Alekseev, B. M. Teplov, P. A. Shevarev. *Tsvet v arkhitekture* (Moskva-Leningrad: Gosstroiizdat, 1934), p. 21.

Fig. 3.14. Aleksandr Liushin. "Practicum of color theory." Student exercise book (VKhUTEIN, 1928-30). Exercise 21: Observing the effects of color fatigue. The Getty Research Institute, Special Collections.

Fig.3.15. Hinnerk Scheper. Color Scheme for the Narkomfin House, apartment type K. Bauhaus-Archiv Berlin (Nachlaß Scheper). Reproduced in *Maliarnoe Delo* ("Color supplement" in No. 3-4, 1930).

Fig. 3.16. Hinnerk Scheper. Color Schemes for the Narkomfin House, apartment type F. Bauhaus-Archiv Berlin (Nachlaß Scheper). Reproduced in *Maliarnoe Delo* ("Color supplement" in No. 3-4, 1930).

Fig.3.17. Hinnerk Scheper. The Narkomfin House. Circulation scheme. Reproduced in *Maliarnoe Delo* ("Color supplement" in No. 3-4, 1930).

Fig.3.18. Georgii Kliunkov. Scheme of a cinema hall. Reproduced in *Maliarnoe Delo* (1932, No.3), p.9.

Fig.3.19. Georgii Kliunkov. Scheme of a condensation of the element of the dark (color and light) according to a graphic of the crowd's movement. Reproduced in *Maliarnoe Delo* (1932, No.8-9), p.5.

Fig.3.20. Herbert Bayer, Design for a cinema (1924-1925). Reproduced in *Bauhaus. Workshops for Modernity. 1919-1933.* Ed. Barry Bergdoll and Leah Dickerman (New York: The Museum of Modern Art, 2009), p.175.

Figs. 3.21-3.23. Erich Borchert. Project of interior color design for railroad workers' club in Liublino (1930). Reproduced in *Maliarnoe Delo* ("Color supplement" in No. 3-4, 1930).

Fig.4.1. "And so the entire day long." Caricature mocking the meetings at the Park of Culture and Leisure. *Biulleten' rabochikh i sluzhashchikh Parka kul'tury i otdykha* (No.2, 26 November 1929). Archive of the State A. Shchusev Museum of Architecture.

Fig. 4.2. Tovarishch U. "Übermensch—this [word] sounds proudly!" http://tov.lenin.ru/gallery/desktop/gorkynietzsche.htm

Fig. 4.3. Moscow workers carrying a prototype model of workers' housing during a demonstration, between 1927 and 1931. Reproduced in V. P. Tolstoi, I. M. Bibikova, and Catherine Cooke. *Street Art of the Revolution: Festivals and Celebrations in Russia 1918-33* (London: Thames and Hudson, 1990), p.206.

Fig. 4.4. "Nazi." Izofabrika of Central Park of Culture and Leisure (c.1931). Photograph by Branson DeCou.
http://digitalcollections.ucsc.edu/cdm/singleitem/collection/p265101coll30/id/3962/rec/8

Fig. 4.5. "Nepmen." Izofabrika of Central Park of Culture and Leisure (c.1931). Photograph by Branson DeCou.
http://digitalcollections.ucsc.edu/cdm/singleitem/collection/p265101coll30/id/3977/rec/14

Fig.4.6. "Colonized India." Installation by E. I. Kheifetz paraded through the streets of Moscow (1929). Reproduced in V. P. Tolstoi, I. M. Bibikova, and Catherine Cooke. *Street Art of the Revolution: Festivals and Celebrations in Russia 1918-33* (London: Thames and Hudson, 1990), p.182.

Fig. 4.7. "American Pork King." VKhUTEIN, c.1929. Reproduced in B. Zemenkov. *Oformlenie sovetskikh karnavalov i demonstratsii. Metodicheskoe posobie dlia izo-kruzhkov goroda i derevni* (Moskva: Khudozhestvennoe izdatel'skoe akts. o-vo AKhR, 1930), p.59.

Fig. 4.8. "Bureacrat." VKhUTEIN, c.1929. Reproduced in B. Zemenkov. *Oformlenie sovetskikh karnavalov i demonstratsii. Metodicheskoe posobie dlia izo-kruzhkov goroda i derevni* (Moskva: Khudozhestvennoe izdatel'skoe akts. o-vo AKhR, 1930), p.19.

Fig.4.9. "Worker." Tin installation. VKhUTEIN, before 1932. Collection of the Museum of the Moscow Institute of Architecture.

Fig.4.10. Sculptural group "Hooligans" and its audience. TsPKiO, 1931-1932. Reproduced in V. P. Tolstoi, I. M. Bibikova, and Catherine Cooke. *Street Art of the Revolution: Festivals and Celebrations in Russia 1918-33* (London: Thames and Hudson, 1990), p.222.

Fig. 4.11. Stills from the film documenting Viktor Kalmykov's model of Avtostroi. VKhUTEIN, 1929. Reproduced in *Sovetskaia arkhitektura* (1931. No. 1-2), p.22-23.

Fig. 4.12.Nikolai Ladovskii, Model of Kostino Village (1929). Reproduced in *Stroitel'stvo Moskvy* (1929, No.7), p.15.

Figs. 4.13. Liubov' Zalesskaia. Central Park of Culture and Leisure. Perspective and VKhUTEIN, 1929. Reproduced in *Stroitel'stvo Moskvy* (1929, No.10), p.16.

Fig. 4.14. Liubov' Zalesskaia, Central Park of Culture and Leisure. Children Village, VKhUTEIN, 1929. Collection of the State A. Shchusev Museum of Architecture.

Fig. 4.15. ASNOVA Brigade, Palace of the Soviets. Competition Project (1931). Reproduced in *Sovetskaia Arkhitektura* (1931, No.4), p.53.

Fig. 4.16. The TsPKiO Brigade. "The Scheme of Demonstrations." Part of the competition project of the Central Park of Culture and Leisure (1931). Reproduced in B. N. Glan, ed. *Za Sotsialisticheskii Park: Obzor Proektov General'nogo Plana Tsentral'nogo Parka Kul'tury I Otdykha Mossoveta* (Moskva: Izd-vo Mosoblispolkoma, 1932), n.pag.

Fig. 4.17. The TsPKiO Brigade. "The Scheme of the Formation of a Mass Action." Part of the competition project of the Central Park of Culture and Leisure (1931). Reproduced in B. N. Glan, ed. *Za Sotsialisticheskii Park: Obzor Proektov General'nogo Plana Tsentral'nogo Parka Kul'tury I Otdykha Mossoveta* (Moskva: Izd-vo Mosoblispolkoma, 1932), n.pag.

Fig. 4.18. Konstantin Mel'nikov. Park of Culture and Leisure, Competition Project, 1931. Reproduced in B. N. Glan, ed. *Za Sotsialisticheskii Park: Obzor Proektov General'nogo Plana Tsentral'nogo Parka Kul'tury I Otdykha Mossoveta* (Moskva: Izd-vo Mosoblispolkoma, 1932), n.pag.

Fig. 4.19. Mikael Mazmonian. Moscow TsPKiO. General Layout and Entry Ramp-Arch. Diploma (thesis) project (VKhUTEIN, 1929). Reproduced in S. O. Khan-Magomedov, *Ratsionalizm (Ratsio-arkhitektura) "Formalizm"* (Moskva: Arkhitektura-S, 2007), p.443.

Fig. 4.20. Mikael Mazmonian. Moscow TsPKiO. General Layout and Entry Ramp-Arch. Diploma (thesis) project (VKhUTEIN, 1929). Reproduced in *Stroitel'stvo Moskvy* (1929, No.10), p.15.

Figs. 4.21-4.22. El Lissitzky, Sketches for Moscow TsPKiO, c.1930. Collection of the Russian State Archive for Literature and Arts, Moscow.

Fig. 4.23. Viktor Kalmykov. Moscow TsPKiO. Competition Project, 1931. Collection of the Russian State Archive of Scientific and Technical Documentation, Samara.
Figs. 4.24-4.25. Viktor Kalmykov. Examples of simple rhythmical groupings of vegetation (1936). Collection of the Russian State Archive of Scientific and Technical Documentation, Samara.

Fig. 4.26-4.27. Viktor Kalmykov. Model of Tashkent Stadium. Collection of the Russian State Archive of Scientific and Technical Documentation, Samara.

Fig. 4.27. Viktor Kalmykov. Scheme of Tashkent Stadium. Collection of the Russian State Archive of Scientific and Technical Documentation, Samara.

Fig. 4.28. Vladimir and Georgii Stenberg. Central Park of Culture and Leisure, Lilly-of-the-Valley Alley. Early 1930s photograph. Reproduced in Marianna Evstratova and Sergei Koluzakov. *Vremennaiā Arkhitektura Parka Gor'kogo: Ot Mel'nikova Do Bana / Temporary Structures in Gorky Park : from Melnikov to Ban* (Moskva: Tsentr Sovremennoi Kul'tury "garazh," 2012), p.119.

Fig. 4.29. "Blue Blouse" performance at the Central Park of Culture and Rest. Stage-set by Vladimir and Georgii Stenberg (1929). Reproduced in Marianna Evstratova and Sergei Koluzakov. *Vremennaiā Arkhitektura Parka Gor'kogo: Ot Mel'nikova Do Bana / Temporary Structures in Gorky Park : from Melnikov to Ban* (Moskva: Tsentr Sovremennoi Kul'tury "garazh," 2012), p.118.

Fig. 4.30. Moving art exhibition in the TsPKiO (1934). Reproduced in Katharina Kucher. *Der Gorki-Park: Freizeitkultur Im Stalinismus 1928-1941* (Kö̈ln Bö̈hlau̧ 2007), n.pag.

Fig. 4.31. Military education at the Park of Culture and Leisure (before 1932). Reproduced in B. N. Glan, ed. *Za Sotsialisticheskii Park: Obzor Proektov General'nogo Plana Tsentral'nogo Parka Kul'tury I Otdykha Mossoveta* (Moskva: Izd-vo Mosoblispolkoma, 1932), p.14.

Fig. 4.32. Moisei Ginzburg. TsPKiO. Competition Project. 1931. Reproduced in B. N. Glan, ed. *Za Sotsialisticheskii Park: Obzor Proektov General'nogo Plana Tsentral'nogo Parka Kul'tury I Otdykha Mossoveta* (Moskva: Izd-vo Mosoblispolkoma, 1932), n.pag.

Fig. 4.33. El Lissitzky and Andrei Korobov. Sverdlovsk Park of Culture and Leisure. Project, 1931. Reproduced in L. B. Lunts. *Parki kul'tury i otdykha* (Moskva: Gosstroiizdat, 1934), p.267.

Fig. 4.34. Militsa Prokhorova. Zoning scheme for Tula TsPKiO (1934). Collection of the State A. Shchusev Museum of Architecture, Moscow.

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