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Patterns of Choice: The Prix Ars Electronica Jury Sessions

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Christa Sommerer

Christopher Lindinger

Sirikit Amann

Florian Brody

Scott S. Fisher

Interactive Art 2003

Christiane Paul

Stahl Stensile

Joseph Paradiso

Media.Art.Research Award 2007

Interactive Art 2002

Tomoe Moriyama

Peter Higgins

Scott DeLahunta

Elaine W. Ng

Andy Cameron

Interactive Art 2004

Interactive Art 2009

Interactive Art 2005

Interactive Art 2006

Golan Levin

Sonia Cillari

Sandrine von Klot

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Joachim Sauter

Karel Dudesek

Masaki Fujihata

Stephen

Hybrid Art 2007

Hybrid Art 2009

Interactive Art 2000

Net Vision 2005

Melinda Rackham

Ed Burton

Yukiko Shikata

Cornelia Sollfrank

Net Vision 2004

Yumi Yamaguchi

Net Vision 2006

Eva Wohlge

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ABSTRACT

This article investigates the social structures reflected in the annual jury sessions of the Prix Ars Electronica, a major media art competition—the composition, the temporal evolution and ultimately the decisions of these juries. The author focuses on three different structures: the network of co-jurors across different categories and years, the co-artist network formed by the jury decisions, and finally the interaction between these two networks. The results not only reveal different roles of individuals in the jury process but also reflect the evolution of the field in general. Based solely on public data, the results show a multifaceted picture of a dynamic field.

Social Network Analysis (SNA) has become a critical tool of artistic practice, adopted by a large number of media artists and activists and used for investigation and critique of political and economic systems. This form of analysis, however, has hardly ever been applied to the field of media art itself, as a system of institutions, festivals and individual networks. Within this system, festivals and competitions play a crucial role in shaping the field. They are stepping-stones for emerging artists and allow scholars to probe the state of the field.

Among the numerous media art competitions that exist today, the Prix Ars Electronica holds a special place. For one, it is among the oldest of its kind. It has been carried out annually since 1987 in conjunction with the Ars Electronica Festival, which has been held since 1979. Furthermore, the award is highly prestigious in terms of both its endowment and its public visibility. As demonstrated in a related study, a significant proportion of media artists have at some point submitted a project, received an award or participated in a jury session for the competition [1]. Throughout its history, the Prix has consisted of three to eight categories, inviting a wide range of submissions including blockbuster animation movies, contemporary sound art and experimental media art, as well as online community projects. Each category awards one main prize called the *Golden Nica*, two *Awards of Distinctions* and 12 *Honorary Mentions*. Since 1998, the competition has also included a category for young local artists under the age of 19, and, since 2004, a fellowship grant for artists younger than 26 [2,3].

This article discusses the relevance and applicability of social network visualization for understanding the structure and social dynamics behind such a heterogeneous and historically rich institution as the Prix Ars Electronica by examining the network of co-juror relationships and award decisions. As the field of media art keeps evolving and changing, questions emerge about the relationship between these fields and categories within the competition and how this relationship is reflected in the social composition of the juries and the track record of their decisions.

To answer these questions, methods of network analysis used in the social sciences seem applicable. Other scholars have, for example, investigated jury decisions in cultural competitions, such as the Eurovision Song Contest, by using social network analysis to gain insight into the interplay between culture and political agendas [4,5]. For these methods of analysis, a wealth of relevant and suitable data is available in digital archives and data repositories. Currently, however, such approaches and data sets play little role in humanities research.

RESEARCH QUESTIONS

One of the commonplace themes in media art is the convergence of art, science and technology [6]; interdisciplinarity—or the rejection of disciplines altogether—has therefore always been seen as a defining property of the field [7]. The Prix Ars Electronica has embodied this idea since the beginning. Its scope transcends the art world and addresses commercial companies and organizations, academics and autodidactic enthusiasts. The result is an often startling mix, spanning across works such as commercial Hollywood productions, hybrid artworks, theoretical essays and on-line community platforms. The question arises as to how these seemingly foreign fields and categories relate to one other in the context of the competition. Furthermore, how is this mixture reflected in the social structure of the competition—the relationship between and among the organizers, the juries and their decisions? Finally, is the structure of the competition a result of historical development or the result of a programmatic vision?

To address these questions, I will use the term *social network* with a disclaimer: This article is not directly investigating the private and professional connections between jurors or artists. Rather than exposing hidden arrangements and networks through investigative journalism, this article is aimed at understanding what can be gleaned from public data—by focusing on the relationships between publicly known facts. As Josh On has demonstrated in his seminal piece *They Rule* (2001)—showing the personal interconnections between members of Fortune 500 companies' directorial boards—even commonplace public data can unveil an additional dimension of information if aggregated and examined as a network [8].

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Article Frontispiece. (top) Topology of the complete jury network covering the period 1987–2009. (bottom) Detail view. (© Dietmar Offenhuber)

The following analysis is based on a set of simple, uncontroversial facts: first, who participated in the same jury session and, second, who got awards from this jury. The resulting jury network reflects to a large degree the preferences of the organizers, who are responsible for selecting and inviting the jurors. However, as jury members often have the opportunity to recommend other jurors—formally or informally—the network also reflects acquaintanceships, or "weak ties" [9], between these jurors. An Ars Electronica jury session is an intense 3-day process, during which hundreds of entries need to be discussed and the jurors get to know each other very well, if they have not done so before. In a typical jury session, five to six jurors collectively decide on the winners of the *Golden Nica*, the *Awards of Distinction* and the *Honorable Mentions* from the pool of non-anonymous submissions, which often exceed 500 entries per category. A jury session concludes with a statement collectively authored by the jurors, justifying their decisions.

DATA SOURCES AND REPRESENTATION

The dataset used in this study was generated entirely from information available on the Ars Electronica website [10]. The data include the list of jurors for the different categories of the Prix Ars Electronica and the list of artists and projects

receiving awards from these juries, covering the entire history of the competition since 1987. By combining the information about jurors, jury sessions and award recipients, I have extracted two different networks. The first network describes the co-juror relationships among persons participating in jury sessions over the years (Article Frontispiece); the second network represents the connections among the artists who were selected by the Prix juries (Color Plate B). Each node in these networks represents either a person or a jury session from a specific category and festival year. A connection between these nodes either describes a person's participation in a specific jury session or the receipt of an award from a jury. The networks are bi-partite, which means they only contain connections between persons and jury sessions—never direct connections between persons.

Currently, the Prix encompasses seven different categories, including *Computer Animation/Film/VFX; Digital Musics & Sound Art; Interactive Art; Hybrid Art; Digital Communities; U19;* and *[the next idea].* Over the years, the categories have changed substantially: categories such as *Computer Graphics* were dropped while others, such as *Digital Communities,* were introduced. Yet others, such as the theory-focused *Media.Art.Research* Award, part of the 2007–2009 competition, made only brief appearances. Many categories have also undergone substantial programmatic shifts over the

years or have changed their name. For the sake of consistency and simplicity, I have grouped similar categories of the same "pedigree" together, for example grouping the categories of *Digital Music* and *Computer Music* into a branch of *Music* categories, and categories such as *World Wide Web*, *net.art* and *net.vision* into a branch of *Net-Based Arts.*

This study is part of the *Mapping the Archive* project presented at the 2009 Ars Electronica Festival (Fig. 1) [11]. The study is closely related to the quantitative analysis of Ars Electronica submissions by Gerhard Dirmoser, who collected a complete dataset of individual submissions and traced their "echoes" in publications [12]. Both studies were conducted using *semaspace*, a network visualization tool I have been developing together with Gerhard Dirmoser since 2004 [13]. The software is based on a force-directed layout paradigm [14] that was adapted for the real-time layout of large networks including radial and timeline representations. Network centrality measures were calculated using Ulrik Brandes's Visone tool [15].

THE JURY NETWORK

Analysis of the jury network reveals the first surprising fact about the jury network: It forms a single cohesive structure instead of multiple isolated network fragments. This indicates a strong movement between the different categories,

Fig. 1. Presentation of the *Mapping the Archive* project at Ars Electronica 2009. (Photo © Dietmar Offenhuber)
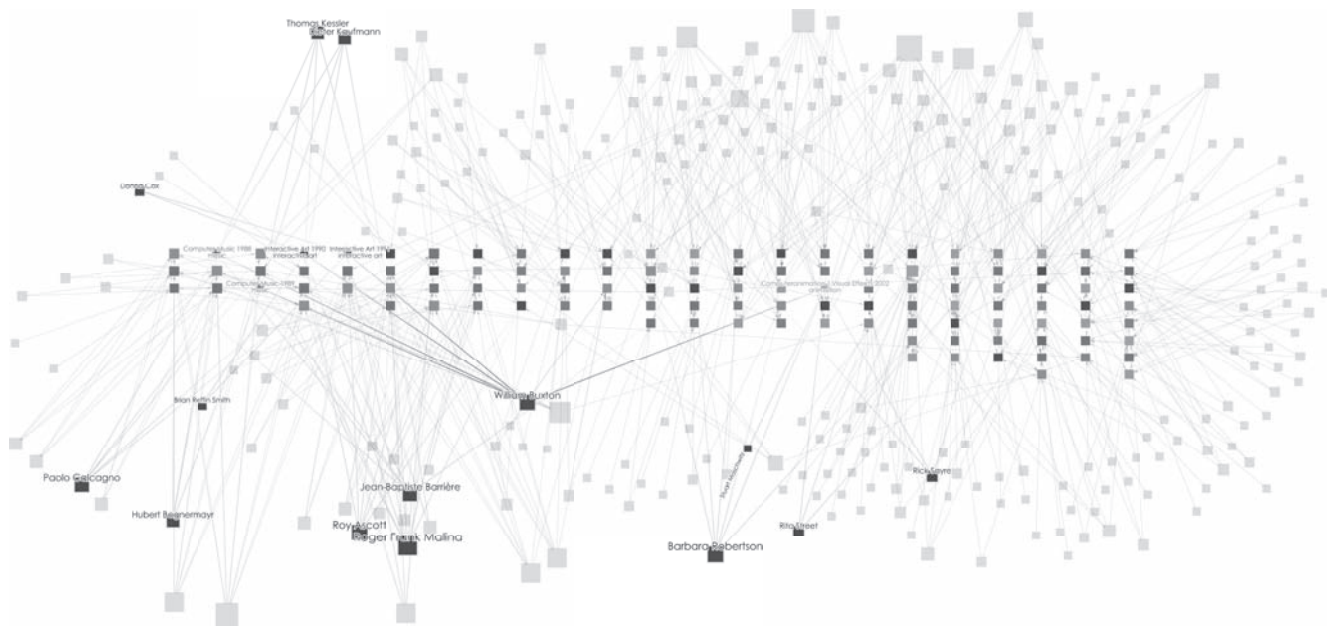
Fig. 2. Timeline view of the jury network, with Bill Buxton highlighted. (© Dietmar Offenhuber)

explained by the fact that many jurors have participated in more than one category over the years. With one exception, there has never been a jury session without a juror who participated in another Prix Ars Electronica jury in an earlier or later year. The network supports the impression that Ars Electronica represents a very well-connected social system. Furthermore, the jury network shows distinctive regions corresponding to the different categories—some are more central than others. Some categories appear as heavy, compact clusters, while others form an extensive, intricate web. Still other categories appear as narrow ribbons winding between the perimeters of other categories.

The categories *Computer Animation* and *Computer Graphics* are among the oldest categories of the competition. Having shared many jurors over the years, they appear in the layout as tightly connected with one another. Their concentrated appearance results from the fact that in the early years of the competition the field was small, and especially in the first 6 years the jury composition changed very little. Another early category, *Computer Music,* shows a similarly pronounced center but also has fringes reaching out to other categories—reflecting programmatic changes toward a more interdisciplinary approach in later years. By contrast, the categories of *Interactive Art*, *Hybrid Art* and the categories covering net-based art forms form an extensive mesh without a clear center, though still sharing many of the same jury members. These

initial observations already tell a story about the nature of the different fields involved—while the *Animation* category is well defined and shows little change over time, *Interactive* and *Hybrid Art* have been subject to continuous changes and redefinitions.

INDIVIDUAL JURORS: HUBS AND BRIDGES

Besides the overall morphology of the network, the roles of individuals are of special interest. Some jurors occupy the center of a cluster, having been invited many times to a jury session of the same category. In network terminology, these persons have a high *degree centrality*. Usually, these are jurors who have had a great influence on the programmatic direction of a specific category. Examples of such hubs are the U.S.-based curator and composer Naut Humon, who has shaped the music competition for many years; net activist Joichi Ito for the net-based art categories and the *Digital Communities* category; and Sirikit Amann, the organizer of *U19*, the "junior" category. The importance of these three individuals is emphasized by the fact that other jurors in the same categories changed frequently and seldom participated more than twice.

Other jurors, such as the artists Michael Naimark and Christa Sommerer (who teaches at the art academy in Linz) have participated overall in fewer jury sessions but have served in more than one category. In the network layout,

these persons act as bridges connecting different categories—without them the network would break into many unconnected "islands." In network terminology, they have a high *betweenness centrality* [16]. Nodes with a high betweenness centrality often occupy important positions in real-life social networks, being facilitators of information exchange between different fields.

By inviting individuals such as Naimark and Sommerer to the juries of different categories, the organizers acknowledge their transdisciplinary competence. Therefore, the bridges in the network established by those jurors can be read as the organizers' perspective on interdisciplinarity. One particularly interesting example is the history of Bill Buxton's involvement in Ars Electronica juries. He was first involved as a member of the *Computer Music* jury in the late 1980s. He joined the *Interactive Art* jury in the early 1990s and 10 years later he participated once again as juror of the *Computer Animation* category (Fig. 2). This path reflects his professional trajectory from electronic music to *Human-Computer Interaction* and, as a research scientist in a 3D software company, to visual interfaces.

The record of jury participations not only reflects the personal histories of the individuals involved but also shows trends and connections in the whole field of media art. The differences in the roles of jurors can be also expressed through their network centrality measures. Among the jurors with the highest number of jury

Table 1. A comparison of degree and betweenness centralities of persons in the jury network. On the left, persons ranked by the number of jury participations from 1987 to 2009; on the right, persons ranked by their betweenness centrality measure, specifying the percentage of all shortest paths in the network running through the specific node.

Rank	Degree	Juror	Betweenness %	Juror
1	12	Sirikit Amann	3.29	Naut Humon
2	10	Naut Humon	2.60	Jean-Baptiste Barrière
3	10	Alfred Nemeczek	2.40	Michael Naimark
4	9	Horst Hörtner	2.17	Christa Sommerer
5	9	Joichi Ito	2.09	Horst Hörtner
6	9	Loren Carpenter	1.95	Joichi Ito
7	8	Roger Frank Malina	1.90	William Buxton
8	8	Gerhard Johann Lischka	1.60	Roger Frank Malina
9	8	Rolf Herken	1.57	Florian Hecker
10	8	A.J. Mitchell	1.37	John Markoff

Table 2. Artists and companies who received the most awards (primarily names from the *Computer Animation* and *Visual Effects* categories)

Rank	Degree	Artist	Betweenness %	Artist
1	7	John Lasseter	1.47	Tamás Waliczky
2	6	Tamás Waliczky	1.29	Paul DeMarinis
3	6	Industrial Light & Magic	1.28	Golan Levin
4	5	Golan Levin	1.2	PIXAR
5	5	PIXAR	1.06	Shelley Eshkar
6	5	Alejandro Viñao	1.06	Paul Kaiser
7	4	Paul DeMarinis	0.93	Carsten Nicolai
8	4	Bob Sabiston	0.91	Alessandro Ludovico
9	4	Andrew Stanton	0.85	John Lasseter
10	4	Kristi Allik	0.76	Scott Sona Snibbe

participations (degree centrality) are persons closely affiliated with the institution, such as Sirikit Amann, the *U19* organizer, and Horst Hoertner, the director of the Ars Electronica Futurelab. The top-10 list of persons with the most jury participations also contains many jurors from the early phase of the competition (Table 1, left). Ranking the jurors by betweenness centrality changes the picture. Now, the persons affiliated with Ars Electronica score lower, while jurors who are located at the intersection between different fields move up in the list, which is headed by artists associated with music and interactive art (Table 1, right).

THE ARTIST NETWORK

The process used to generate the jury network can be repeated in order to construct a network of award winners, which are associated with the jury session from which they received an award such as the *Golden Nica*, an *Award of Distinction* or an *Honorable Mention*. Compared to the coherent structure of the jury network, the result offers a different picture: The artist network is more fragmented. This can be explained by the higher diversity of awarded artists and the fact that it is rarer for an artist to receive multiple awards, compared to the high number of jury members who participate in more than one year. Still, a substantial number of artists have indeed received more than one award. Most of these artists are part of two large and dense sub-networks, which shape the most prominent features of the artist network. The smaller sub-network is composed of winners of the categories dedicated to young artists, *U19* and *[the next idea]*. It may be speculated that at some point these two "islands" will merge, once an award winner from *U19*

or the *Next Idea* competitions wins a prize in one of the main categories.

Some artists have received multiple awards either in the same category or in different fields. While jurors serving on different category juries reflect the organizers' perspective on interdisciplinarity, artists winning in different categories reflect interdisciplinarity in artistic practice. A number of artists have received awards in both *Computer Animation* and *Interactive Art*, but none in both an animation and a net-based arts category. Tamás Waliczky, one of the most successful Prix participants, has received awards in *Computer Graphics, Computer Animation* and, later on, in *Interactive Art*. Maurice Benayoun's record shows a similar transition from *Computer Animation* in the early 1990s to *Interactive Art* in the late 1990s. A similar pattern emerges in the early 2000s, showing a transition of artists previously awarded in *Interactive Art* moving on to receive awards in net-based art forms: *Digital Music* and *Hybrid Art*.

THE NETWORKS COMBINED: ARTISTS AS JURORS

The organizers of the competition often invite awarded artists to join a jury in subsequent years. In order to account for this fact, I combined the jury and artist networks. In the resulting network, the role of an individual as either a juror or an artist is expressed through the direction of the link connecting the person to a jury session: links from a jury session to a person, for example, indicate that the person received an award from that particular jury. The combined network contains over 2,000 nodes, showing the intertwinedness of the different fields in a more distinctive way. For instance, only the combined network shows the central role of the *Interactive Art* category in the history of the Prix Ars Electronica, which occupies a central location between the other categories. This role can be confirmed by looking at the centrality values. In terms of degree centrality, the highest number of prizes to single artists was awarded in the animation category (Computer Graphics, Computer Animation and Interactive Art), while the individuals with the highest betweenness centralities are mostly individuals primarily involved in *Interactive Art* (Table 2).

Most interestingly, the combined network reveals the distinct decision patterns in the interaction between jurors and awarded artists in the network (Fig. 3). The first pattern describes a situation where the same juror awarded a prize to
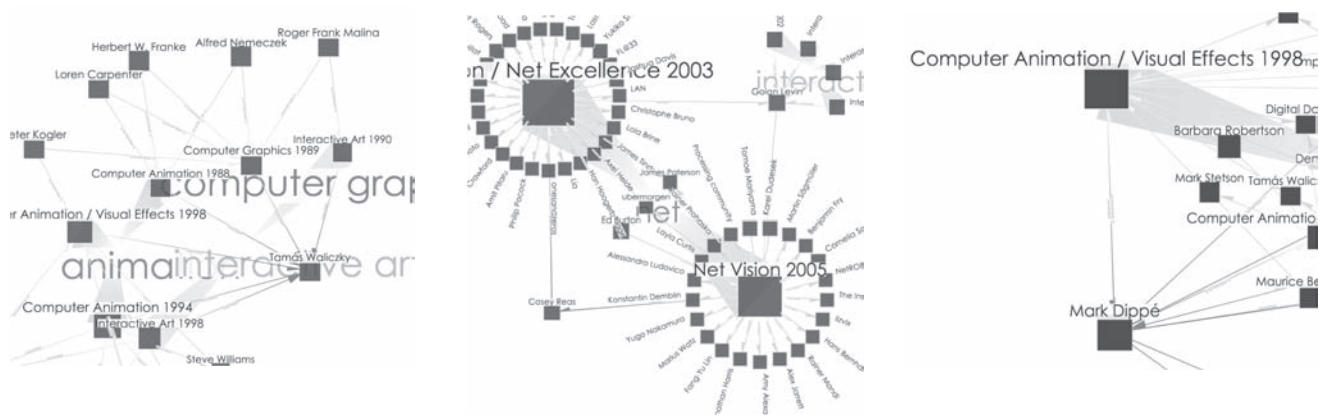
Fig. 3. Three decision patterns in the combined Jury/Award Network. Left: An artist receiving multiple awards from juries sharing the same members. Middle: Two artists who also served as jurors and each received awards from juries the other participated in. Right: A juror receiving an award from a jury of which he was a member. (© Dietmar Offenhuber)

the same artist repeatedly over multiple years. On the structural level, this pattern can be identified by isolating four-node cycles in the network. Notably, this pattern was quite common during the first 5 years of the competition, when the field was much smaller and less diverse (Fig. 3, left). A second pattern shows mutual award exchanges—an artist has received an award from a jury that included an artist who has received an award in an earlier year from a jury in which the former artist served as juror. This pattern can also be identified by finding four-node cycles in the network; in this case, all nodes in the cycle have the same number of incoming and outgoing links (Fig. 3, middle). A third pattern shows an artist receiving an award from a jury in which the artist participated as a juror, a case that occurred only once in the Prix

history so far: film director Mark Dippé in the *Computer Animation* category 1998 (Fig. 3, right). However tempting, these patterns cannot be interpreted as evidence of a juror's personal agenda, since the personal influence of a juror on the decision is limited, keeping in mind that a jury consists of five to six individuals making a joint decision.

THE TEMPORAL DIMENSION

The last aspect of this paper concerns the temporal development of the jury composition. Organizing the jury network along a temporal axis reveals how the number of categories and jurors grew over time. Initially, Prix juries consisted of a relatively small group of individuals who served as jurors for multiple consecutive years. Over the course of the past

20 years, the juries became more diverse and jurors changed more frequently. Still, the overall composition and format of the competition juries remained remarkably consistent, judging from the fact that individual jurors from the very early Prix years kept getting invited until recently.

The role in and impact of individual jurors on the general competition is most strongly visible in the temporal view. A few individuals stand out in particular. Naut Humon, for example, played an important role in the *Music* juries between 1997 and 2006, when he participated every single year. During this period, he was the only constant factor on the jury, as other jurors were frequently changed. Before 1997 and after 2006, however, Humon did not participate in any jury of the Prix Ars Electronica (Fig. 4). Joi-

Fig. 4. Timeline view of the jury network, with Naut Humon highlighted. (© Dietmar Offenhuber)
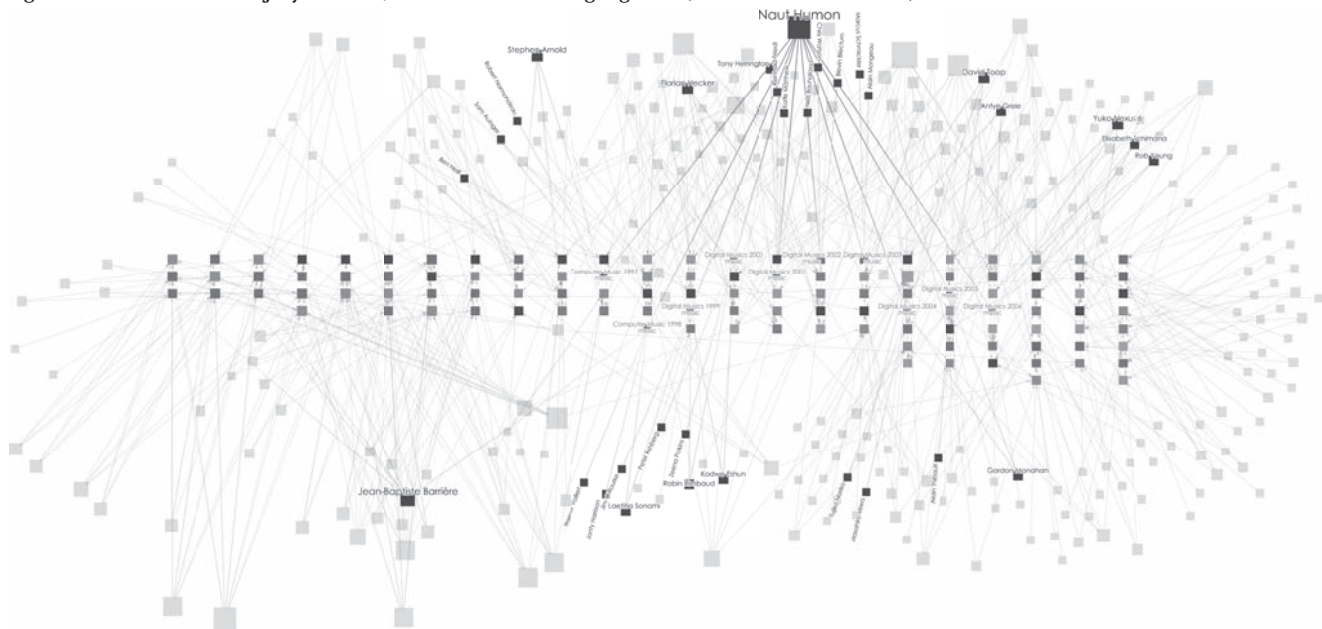
chi Ito held a similar position during the decade of 1995 to 2004 in the networked-art–related and *Digital Communities* categories.

It is worth mentioning that the transition between the three major eras of the festival, shaped by the artistic direction of Gottfried Hattinger, Peter Weibel and Gerfried Stocker, did not leave significant traces in the jury structure in general. The competition expanded and evolved, but the fundamental orientation of the competition remained unchanged. This phenomenon represents a strong contrast to competing media art awards such as the Transmediale Award, which underwent some dramatic changes and re-orientations, including the abolition of all categories in 2005 [17].

CONCLUSION

Who are the artists and jurors that have been most successful and influential for the Prix Ars Electronica? The jury networks give an ambiguous answer. Counting awards and jury participation, the *Computer Animation* and *Visual Effects* categories play a dominant role. Directors and companies such as John Lasseter, Pixar and Industrial Light and Magic have received more awards than any other participating artists so far. Furthermore, the same two categories have had the greatest continuity over time: Their jury constellations have changed less often than in the other categories.

Many might see this prominence of computer animation as anachronistic, given the peripheral place of animation in the current media art discourse. However, shifting the focus to a different set of network properties—the relative location of categories and individuals—changes this picture. In this respect, the *Interactive Art* category holds a central location in the network between all other categories. Accordingly, artists and jurors associated with interactive, hybrid and net-based art have the highest betweenness centrality values; they form the bridges and interfaces that connect all other categories. This difference is a strong argument for the additional benefit of network analysis. While statistics of awards and jury participations are reflected in the raw data, the different roles of individuals and the relationships between the categories are only revealed in the network representation.

The comparison of the jury and the award networks shows different perspectives on interdisciplinarity in the field of media art. On the one hand, the jury network represents the organizers' per-

spective on the interfaces between the different categories and their evolution over time. On the other hand, the award network shows the perspective of artistic practice, as far as connections between fields are concerned. The temporal aspect shows how different fields of practice have influenced each other, reflected in the biographies of individual artists. While rarely acknowledged in the histories of media art, computer graphics and animation were an important influence on the further development of interactive art, as reflected in the personal trajectories of artists such as Peter Weibel, Maurice Benayoun or Tamás Waliczky, all of whom received awards in the *Computer Animation* category.

Of course, one has to keep in mind what the links in these networks actually represent and not get carried away with speculative interpretations. Still, relational data such as the examined networks contain a wealth of implicit information that is not immediately obvious in the raw data. In the future, the study could be extended in two ways: First, to complement the Ars Electronica data set with social network information from other sources, such as professional and institutional affiliations, data from social networking sites or participation in other festivals and conferences. A second possibility would be a textual analysis of the collaboratively authored jury statements and comparison of their terminology and references with the social network data gathered for this study. We have already started to explore this more qualitative trajectory in the scope of the *Mapping the Archive* project mentioned earlier. The key question remains, What characteristics can be explained through the relationships that are represented in the network—the interactions between jurors, artists and curators? In this respect, the purpose of this article has been to show how much implicit information is contained even in a limited dataset. The two networks paint a rich picture of the Prix Ars Electronica as a social system, its actors, their decisions and their interconnections [18].

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18. The jury networks can be explored interactively using the semaspace software tool at the following address: <http://vis.mediaartresearch.at/webarchive/public/view/mid:6>.

Glossary

topological distance—the term "distance" in this article usually refers to topological distance (the number of steps along network paths between two nodes) rather than metric distance (the geometric position in the layout).

bi-partite graph—a network graph whose nodes can be divided into two different sets. Connections are only allowed between two nodes belonging to different sets, never between nodes of the same set. In the example above, the two sets describe either persons or jury sessions. Persons can only be connected via a shared jury session node.

network centralities—a considerable number of metrics have been developed for describing and quantifying the location of a node in relation to the network it is embedded in. The three most basic centrality measures are **degree centrality**, describing the number of incoming or outgoing connections of a node; **closeness centrality**, the average topological distance to all other nodes, and **betweenness centrality**, describing the percentage of shortest network paths that flow through a specific node. Network centralities are essential for understanding the role and importance of a node in a network in which information is exchanged.