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From Data to Drama: Visualizing Complexity in Interactive Media Arts

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ABSTRACT

This paper explores how contemporary data artists transform abstract datasets into emotionally resonant and visually immersive experiences, a process referred to as the transition "from data to drama." Bridging insights from interactive media theory, aesthetics, and critical data studies, the research examines how complex sociopolitical, ecological, and cultural systems are made perceivable and affectively engaging through artistic visualization. By analyzing seminal works by artists such as Refik Anadol, Laurie Frick, and Ryoji Ikeda, and contextualizing them within theories of performativity, embodiment, and computational aesthetics, the study reveals how interactive media arts not only represent complexity but allow audiences to feel it. This paper proposes that the dramatization of data through visual storytelling opens new possibilities for public understanding, engagement, and ethical reflection on the systems shaping contemporary life.

Keywords: Data Aesthetics, Interactive Media, Complexity Visualization, Data Art, Computational Storytelling.

INTRODUCTION: THE NARRATIVE TURN IN DATA VISUALIZATION

Over the past two decades, the visualization of data has undergone a paradigmatic shift: from an instrumental act of making information visible to an expressive endeavor that transforms abstract data into emotional and sensory experiences. As digital complexity increases alongside the need for public engagement, the fusion of data with artistic modalities has birthed a new aesthetic and epistemological field—data-driven interactive media art. This paper explores how data, once the domain of statistical clarity and empirical legibility, has become raw material for dramatic, affective, and interpretive media encounters.

The rise of interactive data art owes much to shifts in both technology and theory. Advances in real-time data processing, immersive environments, and machine learning have enabled artists to manipulate massive datasets and stage them within participatory interfaces. At the same time, theoretical frameworks from media studies, posthumanism, and actor-network theory encourage us to treat data not as neutral fact but as a discursive and relational phenomenon.

Artists like Refik Anadol, Ryoji Ikeda, and Laurie Frick exemplify this turn. Their work renders data sensorially overwhelming, emotionally charged, or intimately autobiographical. Rather than clarify, such works often dramatize the complexity of systems—from neural networks to climate change—inviting audiences to engage affectively and bodily with the otherwise invisible (Shanken, 2009).

This essay investigates how complexity is not just represented but felt in contemporary interactive data art. Drawing on theoretical lenses such as Lev Manovich's "information aesthetics," Latour's (2005) actor-network theory, and Gilles Deleuze's concept of affect, I argue that data visualization in the arts has transitioned from being a tool of explanation to a form of drama. We are thus in an era where data no longer merely describes the world—it stages it.

DATA ARTISTS AS STORYTELLERS OF COMPLEXITY

Data artists occupy a unique position at the intersection of computation and poetics. Their work demonstrates that data need not be reduced to charts and graphs; instead, it can be sculpted, sonified, or dramatized to communicate the intangible dimensions of contemporary life.

Refik Anadol, for example, is known for his "data sculptures" and "machine hallucinations"—immersive installations that transform data from architectural archives, social media feeds, and even brainwaves into swirling, dreamlike visuals. His works such as Melting Memories or Machine Hallucinations: Nature Dreams transform neural data into aesthetic events, evoking a sense of awe and abstraction that challenges conventional forms of scientific representation.

Ryoji Ikeda takes a more minimalistic approach. In projects like data.scan and data.tecture, he renders scientific and statistical data into monochromatic audiovisual environments that blur the boundaries between precision and noise. For Ikeda, data is not a source of clarity but a material for meditative abstraction.

Laurie Frick, by contrast, personalizes data through hand-crafted visual patterns derived from biometric tracking. Her projects draw on self-tracking tools to visualize mood, sleep, or movement, turning raw data into colorful, intimate maps of everyday life.

What these artists share is a commitment to translating the abstract into the affective, transforming datasets into sensory experiences. In doing so, they challenge the idea that data is fundamentally objective or disembodied. Instead, they reveal that data is always mediated—structured through interfaces, shaped by narrative, and felt through perception.

THEORETICAL FRAMEWORKS: BEYOND INFORMATION DESIGN

The shift from data-as-information to data-as-drama demands new theoretical tools. Manovich's (2001) work on "information aesthetics" provides a foundational starting point. In his view, data visualization can no longer be judged solely by legibility or efficiency; instead, it must be evaluated as a visual-cultural artifact that conveys meaning through form, rhythm, and interaction. The aesthetic dimension of data becomes a key mode of cultural expression.

Bruno Latour's actor-network theory (ANT) also offers a productive lens. In ANT, objects—including datasets and visualizations—are not passive representations but active agents within networks. A visualization does not simply depict reality; it reconfigures relations, delegating agency to some actors while silencing others. In this sense, the artist becomes a network assembler who stages complex sociotechnical arrangements through visual dramaturgy (McCosker & Wilken, 2020).

Finally, Gilles Deleuze's theory of affect shifts our attention from meaning to sensation. Data visualization, under this view, is less about clarity and more about force—how the work moves us, interrupts us, or reconfigures our perceptual habits. Affect theory accounts for the somatic, pre-linguistic impact of interactive installations, where users may not "understand" the data cognitively but are nonetheless deeply moved.

Together, these frameworks help illuminate how data visualizations in media arts do more than illustrate—they mediate, embody, and provoke.

FROM DATA TO DRAMA: MODALITIES OF EXPRESSIVE COMPLEXITY

To understand how complexity is visualized dramatically, we must consider the multimodal strategies employed in interactive media artworks. These include:

Temporal Layering: Works such as Unnumbered Sparks by Aaron Koblin and Janet Echelman use real-time data to shift visual forms over time, creating a sense of unfolding narrative.

Embodied Interaction: Viewers often participate physically, using gesture, movement, or gaze to influence outcomes, thus becoming co-authors of the visual event.

Emotive Encoding: Colors, sound, and motion are used not for aesthetic ornament but as codes of mood, urgency, or tension. For example, red pulsations might signal systemic stress, while soft blue gradients suggest stability.

This dramatization strategy aligns with Drucker's (2011) concept of "capta" versus "data"—suggesting that

what we present as data is always captured, not given. Thus, the aesthetics of data visualization should reflect this epistemological instability. Artists may exaggerate, stylize, or distort data not to deceive but to surface the underlying affective truths concealed by statistical abstraction.

In this context, drama is not narrative per se, but affective structure—the modulation of viewer sensation across time and space. The aim is not clarity but encounter, not simplification but intensification. Complexity is made visible by being made felt.

CHALLENGES AND FUTURES: ETHICS, INTERPRETATION, AND AESTHETIC OVERLOAD

As with any emerging aesthetic practice, data dramaturgy raises ethical and interpretive concerns.

One challenge is aesthetic overload—when visualization becomes so complex or spectacular that it overwhelms rather than enlightens. Works that rely heavily on sensory saturation may alienate viewers or obscure critical content. Designers must balance affective immersion with cognitive accessibility.

Second is the issue of data ethics. When artists use personal or environmental data, questions arise around consent, transparency, and representation. Whose data is being visualized? What narratives are being privileged or omitted? Projects like Immersion by Moritz Stefaner and We Feel Fine by Jonathan Harris exemplify sensitive approaches to data subjectivity, while others risk aestheticizing suffering or anonymizing experience.

Finally, there is the risk of interpretive ambiguity. Because expressive data art often resists linear narrative or fixed meaning, viewers may struggle to make sense of what they are seeing. While this ambiguity can be productive, it also demands careful framing—through curatorial texts, participatory contexts, or guided interaction.

The future of data drama lies in participatory dramaturgy—systems where users not only experience but shape data aesthetics. This could include biofeedback systems, AI-generated personalization, or community-sourced datasets. Such practices transform data visualization from a mode of representation into a dialogic process, where complexity is co-performed.

CONCLUSION

In the age of ubiquitous computation, the question is no longer whether data can be visualized, but how—and to what ends. As this paper has shown, interactive media artists are leading the way in reimagining data not as inert information but as expressive material. Their works invite us to feel complexity, to dramatize abstraction, and to participate in networks of meaning-making that challenge the instrumentalism of conventional design.

By turning data into drama, these artists contribute to an expressive data culture—one that does not reduce the world to numbers but reanimates it through sensation, interaction, and imagination.

REFERENCES

Drucker, J. (2011). Humanities approaches to graphical display. *Digital Humanities Quarterly*, *5*(1), 1-21.

Latour, B. (2005). *Reassembling the social: An introduction to actor-network-theory*. Oxford, UK: Oxford University Press.

Manovich, L. (2001). *The language of new media*. New York, NY: MIT Press.

McCosker, A., & Wilken, R. (2020). *Automating vision: The social impact of the new camera consciousness*. London, UK: Routledge.

Shanken, E. A. (2009). *Art and Electronic Media*. London, UK: Phaidon Press.