

# Three Questions Concerning Authoring Tools

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**Abstract.** This paper approaches authoring as a crucial, yet so far under-researched area of scholarship in interactive digital narratives (IDN). It identifies a number of sub-topics that are in need of academic scrutiny and poses questions which represent opportunities for future research. One such area is the motivation for the creation of IDN authoring tools. The second pertains to critical vocabulary to describe authoring tools along with methods that enable comparative perspectives. A third one is the role of authoring tools in shaping the creative process and the resulting products.

**Keywords:** Interactive Narrative Authoring · Critical Vocabulary · Interactive Narrative Design · Creativity Tools · Design Process · Interactive Digital Narrative

## 1 Introduction

Authoring tools play an important role in the creation of Interactive Digital Narrative (IDN) artefacts. Indeed, authoring has been a focus of the European research project IRIS [1] and features prominently as a topic of research papers in the field [2, 3]. However, there are still considerable gaps in scholarship on authoring, especially when it comes to the understanding of authoring tools. In this paper, I will discuss three areas that need attention and thus represent opportunities for future research.

Before doing so, however, some general observations on the state of authoring tools are in order. In the field of IDN (sometimes referred to Interactive Digital Storytelling, IDS), no dominant tool comparable to the Unity authoring suite for game development exists. Instead, there are many different entries (e.g. [4-8]). in a highly fragmented field. Therefore, Jay Bolter’s comment on this situation: “everybody wants to have their own authoring system” (private communication, 2010) rings true. Simultaneously, not many of these tools are known to have been used on more than a handful projects. When one of these tools do get adopted by a larger group of creators – for example in the case of Storyspace<sup>1</sup> in the 1990s and more recently with Twine<sup>2</sup>– they tend to generate their own communities, with only a few projects achieving recognition outside these circles.

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<sup>1</sup> <http://www.eastgate.com/storyspace/>

<sup>2</sup> <https://twinery.org>

## **2 What Drives the Creation of Authoring Tools?**

Bolter's remark invites a quick retort – “but why?” Indeed, we lack a formal understanding of the reasoning and motivations behind what might appear to an outside observer as a wasteful practice in ‘reinventing the wheel’ in the creation of more and more authoring tools. A tentative answer might be that IDN is an umbrella term for a range of very different manifestations, including video games, interactive documentaries, AR/VR projects as well as art installations and therefore authoring tools created with a particular manifestation in mind are not adequate for a different one. This perspective is in line with Adams and Venkatesh's reasoning that specific context drives the respective requirements for authoring tools: “a heterogeneity of context [...] serves to highlight an important requirement for researchers: They must precisely define the intended domain of the authoring technology in question.” [9]

However, looking at the range of projects realized with tools like Unity or Processing, this answer seems to be incomplete and premature. Indeed, as the maker of an authoring tool [10] (that has been used for about 150 projects so far), in my own reflection, I am less concerned with specific output and more interested in creating a low-threshold entry to IDN creation in combination with a modular system design intended to communicate with other platforms. Thus, the question of what drives the creation of so many authoring tools remains as a topic for future research.

## **3 How Can we Describe Authoring Tools?**

While we can easily determine the sheer quantity of available tools, and consequently also find scholarly reflections on individual tools, attempts at comparisons [11-13] lack a shared vocabulary and methodology for comparison. Here, the IDN community can build on the foundation of HCI-focused research on “tools for creativity” [14, 15]. Yet so far, the call for new assessment approaches and categories for differentiation has not been fulfilled. We still lack many of the formal terms and definitions Shneiderman et al. identified as missing in 2006:

“new assessment approaches [...], including differentiation between quantifiable and qualitative dimensions; identification of qualitative dimensions such as personally meaningful activities, mindsets, relevance; evaluation techniques applicable to ill-defined, open-ended problems” [15]

For these reasons, we are still ill-equipped to describe and compare different authoring tools. It is therefore a task for future scholarship to develop and distribute critical vocabulary alongside methods for assessment and comparison.

## **4 How do Authoring Tools Shape IDN Artefacts?**

It seems intuitively clear that any given authoring tool shapes the creative process and thus influences the resulting products in both direct and indirect ways. Directly, as a result of its concrete affordances (e.g. support for video or not), and also in a more

indirect manner, by structuring the process of creation. In 1997, Simon Penny described the latter relationship as follows:

When artists engage [...] digital tools, a negotiation occurs between methodologies of traditional art practice and the value system inherent in the tools themselves. This negotiation is implicit and rarely discussed. The nature of artistic practice, the artistic product, and the consumption of the work are thereby changed. [16]

For example, we can assume that the timeline metaphor in the dominant multimedia authoring tool of the 1990s, Macromedia Director influenced the thought processes and creative output of these years. However, knowledge about this kind of influence is in its early stages. Again, Shneiderman's work on tools for creativity provides a basis to approach research in this area as do publications in HCI (e.g. [17]) and on related topics comparing AI approaches towards interactive narrative [18]. Yet, overall Penny's observation of an "implicit and rarely discussed" relationship is still mostly true and therefore an area awaiting more scholarly attention.

## 5 Conclusion

In this paper, I have outlined three questions for future research into IDN authoring tools: What drives the creation of authoring tools? How can we (in a formal manner) describe authoring tools? And how do authoring tools shape IDN artefacts? These questions together can provide a foundation for research that will result in a better understanding of authoring tools and the authoring process itself. This new knowledge will enable the creation of more mature tools, and is necessary for enhance the collaboration between tool makers and for better training of creators in the future.

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