
Narratives In Design: A Study Of The Uses, Types, And Functions Of Narratives In Design Practice

Abstract

Many studies have looked at the potential of using narrative to create engaging experiences with designed objects or to enrich the design process. However, the concept of narrative is fuzzy and open to interpretation, as it is used to mean different things by different disciplines and approaches. This paper presents five definitions of narrative based on narrative theory. The use of narrative in design is then reviewed through a typology based on where narratives occur in the design. To conclude, possibilities for future design applications are outlined by proposing strategies for a narrative approach to design.

Author Keywords

Narratives; Narrative theory; Experience Design; Design Process;

ACM Classification Keywords

Design; Theory

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Terminology: Narrative vs. Story

Because narrative is used in so many different disciplines, with different approaches and methodological applications, there is a lot of variation regarding the terminology being used. We have chosen in this paper to focus on the word “narrative”, though other studies within the field of design use the word “story” or “storytelling”.

The term “story” was avoided because it comes laden with a number of connotations from everyday use as well as being used in narratology to indicate only certain elements of a whole narrative: most of the literature [e.g., 3, 15] distinguishes between the events that constitute the plot of the narrative (referred to as *fabula*, *story* or *histoire*) as opposed to the way these events are told (*syuzhet*, *narrative discourse*, *discours*).

Introduction

In the last few decades, design research has made an increasing use of concepts from psychology, sociology, and humanities, to better understand users and to create more engaging product experiences. One such concept, narratives, or stories, has been the subject of several studies in design research.

There are several reasons for the recent interest of design research in narratives. Firstly, narratives play a central role in the way we experience the world: “narratives organize not just memory, but the whole of human experience” [1]. Stories are vehicles [2] and therefore any product experience that is in any way memorable or engaging to a person will thus have been mentally structured in narrative form. Moreover, narratives offer a natural way to understand and structure product interactions over time. They are crucial for our understanding of time and time-based events [3].

Secondly, narratives are the most natural way for people to exchange information, because they evoke more meaning and emotion than bare facts [4, 5]. Moreover, this ability to communicate allows the design to be not only functional but also desirable and engaging; narratives offer new perspectives to imagine, discuss and propose scenarios for the future as in critical design [6] or design fiction [7]. Furthermore narratives as manifested in novels, drama and movies, are exceptionally effective in creating engaging and memorable experiences and they are used as a tool to understand our own identity and selves [8]. This point has raised interest to incorporate narratives directly into the user experience of products [9], and to use narrative structures to enrich user experiences: “[designers could] create rich experiences in a way that

is similar to writing stories: They can carefully plan different emotional narrative elements through time to compose a holistic and meaningful experience” [10]. Lastly, the creation of narratives, or storytelling, can already be observed in many areas of design practice. For instance, tools like user diaries, personas, and cultural probes use storytelling to communicate user insights and to stimulate creativity [11, 12]. Narratives also play a role on the user-side of the interaction: in critical-design artifacts or postmodern products, for example, the accompanying narrative is often an essential part of the product experience; for example, the Tree trunk-bench from Droog design is not just a sitting object, but also a story about customization and locally available resources [13]. However, despite the scholarly interest and its considerable use in design practice, there has been little systematic study of the different uses of narrative in design. We propose that the practice of narrative use in design can benefit from the rich tradition of narrative theory – the study of the structure of narratives, the creation of narratives, and its effect on audiences – which was originated with Aristotle, and further expanded by Russian formalism, constructivism and contemporary psychology. This rich tradition, with contributions from numerous authors who proposed new attributes and definitions, offers a wealth of information, but also prevents a straightforward application of its knowledge to the design field. The lack of a single definition makes it challenging to compare the different uses of narratives, from a story as simple as a single user insight to an all-encompassing narrative of a design movement. Furthermore, different design research studies have used and discussed narrative on different levels, without any clear overview of the concept as such.

Fabula and Syuzhet

One of the most common distinctions made by narratology theorists is between the actual events that make up the story in chronological order: the fabula (also called story or histoire), and the way these events are told or depicted: the syuzhet (also called narrative discourse). This distinction is a factor in practically every narrative, although it is more prominent in some. For instance, in detective stories, the syuzhet leaves out important events, shows flashbacks or flash forwards, and shows misleading information, all because it leaves the audience guessing about the mystery of the crime until the very end.

This paper aims to use insights from narrative theory to provide an overview of what kinds of narratives are used in design, how they are used, to what end they are used, and to show potential new uses of narrative 'types' that have so far been underexposed. First, we review specific definitions of narrative from narrative theory literature, to make clear which 'type' of narrative is applied in different design practices. Next, we present an overview of the ways in which narrative has been used in design research. Thirdly, we emphasize the goals of using narratives and their attributes and principles that are relevant to design. In the last section, we discuss the implications of using narratives in design, as well as the merits of the relatively new practice of using narratives to structure user experiences over time.

Definitions of narrative

Before we can begin to survey the different uses of narrative in design, we need to make clear what a narrative actually is. Because narratives are both varied in nature – from Homer's Iliad to an account of a person's commute – and ubiquitous, it is difficult to converge on a single definition or set of characteristics that describes all narratives. The wide range of disciplines that have dealt with narratives, including narratology, linguistics, literary studies, film studies and philosophy, have defined narratives with a great number of different characteristics, some of which are more relevant to design (such as the occurrence of characters, causality, and elicitation of emotions), and others which are less relevant (such as the role of the narrator). In general, definitions of narratives range from very broad to very specific. The most minimal definitions cover almost any representation of events, whereas the most exclusive definitions are limited to

the kind of narrative one finds in novels and movies. Because different design practices make use of narratives on both sides of this spectrum, and because it is useful to distinguish the different types of narratives that are used in design, five definitions (D1 to D5) are discussed here. Each of these definitions is progressively more specific than the one preceding it. Put another way, each subsequent definition attributes an increasing amount of characteristics, thus narrowing the range of phenomena it considers to be a narrative. These characteristics are displayed in Table 1, and explained in the subsequent definition descriptions.

	Definition of narrative				
	D1	D2	D3	D4	D5
Representation of events	•	•	•	•	•
Chronological		•	•	•	•
Characters		•	•	•	•
Causality or agency			•	•	•
Values and emotions				•	•
Conflicts and climax					•

Table 1 – Characteristics of narrative in definitions

The definitions each feature a description, references of authors who have subscribed to this definition, an example of a narrative that adheres to the definition, and a short discussion of the occurrence of such narratives. In each definition description, the added characteristics are displayed in bold font.

(D1) Minimal definition of a narrative: Narrative is a **representation of one or more events**. (e.g., [3]). Example: "*It started to rain*" – it is a representation (words that form an image) of an event

¹ Note that although the series of events is defined to be chronological, the representation of events does not have to be. For instance, any story using flashbacks is representing events in a non-chronological order, but the story it represent, and the story that is constructed in the audience's mind, is indeed chronological.

² Most, but not all events in the narrative need to be connected through causality or agency. In the example, it did not start to rain because John was walking outside.

(a change in weather). This is the broadest possible definition of narrative. As it includes almost any written account, it is not very useful to distinguish narratives from non-narratives. It is included here for reference only.

(D2) Definition of a sequenced narrative: Narrative is a representation of **one or more characters** in a **series of chronological events**¹. (e.g., [14]). Example: *"Mary was cycling home. She put her bicycle in the bike stand. She opened the door of her house and went in."* – the character Mary undertakes a number of chronological activities. Such a simple narrative is for instance constructed when someone recalls a simple experience, or imagined by children in make-believe play.

(D3) Definition of a logically sequenced narrative: Narrative is a representation of one or more characters in a series of chronological events that are **connected by causality or agency**². (e.g., [15], [16]). Example: *"John was walking outside. It started to rain. John got wet, so he put up his umbrella."* The reader interprets that John (a character) got wet because it had started to rain (causality), which made him decide to put up his umbrella (agency). Simple narratives with causation are for instance used in product marketing: 'This fruit drink is healthier than other brands, because it contains added vitamins.' This 'narrative' is more effective than a statement of the two separate facts without connection. Simple narratives with agency are for instance used in user insight stories: *"Mary bought this car because she likes the way it looks and because she was previously disappointed with cars from other brands."* The

narrative gives insight into Mary's decisions and behavior.

(D4) Definition of a value-laden narrative: Narrative is an **emotion-evoking** and **value-laden** representation of one or more characters in a series of chronological events that are connected by causality or agency. (e.g., [17], [18]). An example is the story of the ant and the grasshopper by Aesop [19]. A summary: *"The grasshopper enjoyed the summer and did not think of the future. The ant on the other hand took no time to rest and built a food supply. In winter, the grasshopper died of hunger, while the ant survived."* This story evokes emotions about the behaviour of the characters, and promotes the value: "diligence pays off in the long run." Such narratives can be used to influence user behavior. For instance, narratives product sustainability are set up to evoke certain emotions (shame about behavior, anxiety for the fate of the planet, compassion for the victims of pollution, etc.) and are meant to affirm good and bad-valued behavior.

(D5) Definition of an entertainment narrative: Narrative is an emotion-evoking and value-laden representation of one or more characters in a series of chronological events that are connected by causality or agency, and which **progress through conflicts toward a climax**. (e.g. [20, 21, 22]). Most narratives designed for entertainment adhere to this definition. For instance, consider the fairy-tale 'Little red riding hood' [23]. The story progresses through several conflicts (e.g. between the wolf and the girl, and between the wolf and the lumberjack) towards a negative outcome (grandmother and the girl are eaten by the wolf) but ultimately into a positive climax in which the lumberjack kills the wolf and saves the victims. The

story evokes emotions like anxiety, fright, anger and relief through the different events. In addition, several values can be attached to the story, such as 'evil sometimes comes in disguise' (the wolf dressed in grandmother's clothes), and 'eventually good conquers over evil'.

These five definitions allow a comparative discussion on the different occurrences of narratives in design practice and on which 'definition level' these narratives exist.

Functions of narratives

Another way to distinguish narratives, apart from what they *are*, is to consider what they *do* to their audience. Because narratives can be effective on many different levels, they have served numerous functions over history. Most of these functions, such as memorability and teaching values, have been used for millennia, for instance by myths. Table 2 shows an overview of seven different functions of narratives, with examples of how these functions are used both on the designer side (in the design process) and on the user side (in product use).

Typology of narrative use in design

We present a typology of ways in which different studies use this concept to create a story through different elements, structure and qualities of the concept. How is the designer directing a narrative for the end-user and how is a narrative created? Is the user creating the story through interaction and personal experience or is the story also a part of the experience that the designer is creating?

To this end we structured our typology in answer of the following question: Where and how in the design and user-object interaction, do narratives occur? We then subdivided the area into four sub-categories as following:

Design facilitates a narrative – the user is both the creator and audience of the narrative

1. Design activates remembered or associated stories.
2. Design facilitates in-the-moment or over time story imagining.

Narrative supports the design process – the designer is both the creator and audience of the narrative

3. Narrative is a tool to understand and empathize with users.
4. Narrative is a tool to spark imagination and creativity.

Design delivers a narrative – the designer creates the narrative, the user is the audience

5. Design is accompanied by a narrative external to the object.
6. Design structures the user experience over time as a narrative.



Figure 1 – 'Anna G', corkscrew by Alessi.

Narrative function	Example of function in design process	Example of function in product use
Conveying information	Designers and researchers use narratives to communicate insights more clearly and effectively, for instance in persona stories, context stories, or stories about current product use.	Narratives can be used to communicate to users about how they can use their products, for instance in usage scenarios.
Evoking reflectivity	User or product narratives that involve an unusual situation or some kind of conflict can be used by designers to highlight design problems or cultural issues.	In critical design, narratives are used to make users reflect on the role of products and technology in their lives
Showing/teaching values	Narratives can be used in the design process to show certain do's and don'ts of user-product interaction, for instance in horror stories of past products	Narratives, such as those used by movements like cradle-to-cradle or modernism, can be used to convey the ideological purposes of the products they set forth
Empathy&Identification	User or persona narratives are often used to achieve a greater empathy with real users than could be obtained with target group data	Personal narratives that a user attaches to an object, for instance its history or who they received it from, can greatly increase the perceived value of the object
Imagination&Creativity	Narratives can be used by designers to spark imagination and increase creativity	Product narratives can inspire the user's to new ways of using the products, or even new ways of fitting the products in their lives
Memorability	User insights that take the form of a narrative are easier to remember than facts or bullet points	Narratives that are attached or created through a product increases the memorability of product experience, and increase word of mouth.
Delighting	Narratives that not just inform but also delight, increase the chance to be used frequently and effectively by the design team	Narratives, either as part of a product or external to it, can enrich the user experience

Table 2 – Different functions of narratives with examples of their use in the design process and in product use

Category 1, "design activates remembered or associated stories in the user", exemplifies the lack of intention on the part of the designer because we can include in this category any object that has a personal meaning derived through memory of a significant event, place, time or person. An obvious example would be grandma's knick-knack or even better a piece of grandma's cookware, which we inherited and keep on the mantelpiece because it reminds us of when we went to visit grandma as children. The object was not specifically designed to contain and activate these

memories, but it comes to form part of a person's identity. Daniel Miller has written at length about material culture from an anthropological point of view, and how objects, in particular domestic objects, can come to take on personal meaning and stand in for certain aspects of a person's identity [24]. In this category we can also include those objects that are specifically designed to activate some cultural meaning that is pre-existing in the user because they are part of the general cultural knowledge of the intended audience, for example Alessi's Anna G corkscrew



Figure 2 - Anthony Dunne and Fiona Raby, "Placebo Project: Nipple Chair", 2001



Figure 1 - Bill Gaver, "Dream Recorder", Cultural Probes, 2004



Figure 3 - Freya's Cabin looking over the freezing lake

(Figure 1) not only functions through metaphor to activate associations in the user, for example by taking on the image of a happy almost saintly woman [25], but also through the choice of title it references Sigmund Freud's famous patient Anna G, activating a whole other set of associated ideas in the user.

Category 2, "design facilitates in-the-moment story imagining in the user", is probably the most open-ended. The designer inspires the narrative but leaving place to personal interpretations, for example through ambiguity. When discussing this category we kept coming back to the example of a child playing with a stick, and imagining that it is a horse, or a sword, or a fishing rod, or a witch's broom [26]. The stick lends itself to this play because it is vaguely reminiscent of these other objects in shape, but again this similarity is not designed into the object itself, and the simple nature of its form and usage leaves space for this playful interaction to happen. Tony Dunne's Nipple Chair (Figure 2) is designed to give control to the user in terms of imagining a story, therefore "facilitating in the moment story imagining in the user" but there was also a clear intention on the part of the designer to have the object experienced in a particular sequence and to elicit certain emotions and meaning constructs with short term and with long term use, therefore by directing a structured narrative – Category 6.

Category 3, "narratives as tool to understand and empathize with users", is very common in a lot of fields of design but particularly in service design projects which focus on the user experience of a service. In product and interactive design a lot of methods are documented that use narrative for user insight, starting from ethnographic approaches to design research to

interviews and oral histories. Cultural Probes [27] have gained popularity for designers in the past decade and are widely used in different forms. Rather than recording data from the user from classical psychology methods, Probes stimulate users to tell stories about themselves and their life [4]. The Dream Recorder (Figure 3) makes people talk and share intimate information, authentic thoughts that further on inspire designers in their process.

Category 4, "designer uses narrative elements in the design process as tool to spark imagination and creativity" is very much apparent in the way Studio Weave works on architectural commissions. Their project Freya and Robin for example started life as a story about two characters that lived on the two opposing sides of the lake for which the studio was designing observation cabins (Figure 4). The story then became the guiding principle for the design of the cabins, and was used to motivate most of the choices from materials to forms to functions of the cabins. From the design research literature there are numerous examples of narrative elements being used during the design process as a creativity tool, such as [11, 27-29]. In [11] the authors argue that literary fiction can be used as a resource for design and in [29] show how unrelated products like a toy revolver (Figure 5) brings in a different story, firstly completely uncorrelated from the design brief and thus that leads to more creative ideas by opening a new space for narrative.

Category 5, "design is accompanied by a narrative external to the object", can be exemplified with everyday branding, so when buying a pair of Nike shoes the user is buying into the whole idea of Nike the brand, which is communicated through advertising,



Figure 5 – Toy revolver



Figure 6 - "Women & Infants" Glass (Original price: \$0.25. Final price: \$50.00)



Figure 7 - S. Grimaldi, The Ta-Da series, 2008

word of mouth, etc. But this external narrative can also be present on a more macro level than brand, for example when buying organic milk people will have an associated narrative of happy cows, health and environmental benefits, or when looking at a piece of modernist design this will evoke cultural associations with ideas around "good design", "form follows function", and wider connections to the "Unité d'Habitation". Another example in which external narratives are used in a more explicit way is the Droog products - every Droog object is accompanied by a story or in the recent project Significant Objects [30], in which cheap objects (Figure 6) were purchased at flea markets and writers were asked to write an accompanying story; the objects were then sold on EBay with the attached story to verify the increase in value.

Category 6, "designer structures the user experience over time as a narrative" is one the authors have a particular interest in investigating because we found very few examples of this from the design point of view. Some everyday objects unintentionally fit this category very well, for example Löwgren [31] describes, within the context of aesthetics of interaction, how an experience with a cash machine (ATM) is articulated as a story in a user's mind through build-up and release of tension. He describes how dramatic tension builds in the time it takes for the machine to process your pin, how the people waiting to use the machine after you impact your fear of discovering that you are out of funds (with so many people watching, the shame!), and how the money and card finally being released from the machine make you sigh with relief. Within the realm of product design we found that Anna G (Figure 1) could fit this category as

well, because the way the object looks contradicts the way it is used, in particular the figure of the woman has a saintly appearance, but then the cork needs to be retrieved from under the woman's skirt. This contradiction presupposes a time-based discovery on the part of the user [2]., In the same way Dunne and Raby's Nipple Chair (Figure 2) will also structure a change in user perception and interpretation over time, because the appearance of two nipples on a chair back will give the user a particular interpretation and understanding of the object, but the fact that the nipples unpredictably vibrate on and off at certain times of the day will then add to and change this story changing the user's perception and interpretation of the object over time. Products that bring surprise could also enter within this category like the Ta-Da series (Figure 7) of [32].

It is interesting to note that the goal of using narrative elements in design might not be related to the way in which it is used according to the above typology. So for example narrative can be used in a critical design way to highlight aspects of people's behaviour or values or even more generally to make the user reflect on an issue, such as for example Dunne and Raby's Nipple Chair, prompting people to think about the cultural implications of electromagnetic fields in the home. Or sometimes narrative elements will be used to increase the memorability of the object, such as in Alessi's Anna G, or in Studio Weave's Freya and Robyne, or to foster identification between the user and the object, such as with any branded object which uses an external narrative to help the user identify with the ideal presented in the advertisement. Often the goal of using narrative elements in the design process is to foster

creativity in the designer or in the team, such as with Gaver's Ambiguity technique mentioned above [33].

Discussion

We are interested to outline which characteristics and structures are useful to designers in the creation of narratives. In particular, we distinguish between something being a minimum narrative and something being a meaningful, interesting, engaging, memorable, rich narrative. If minimum narrative is broadly defined as a sequence of events told or interpreted by the user, any experience could be described or analysed as a narrative. However, it is more interesting for designers to see which elements could be added to this minimum narrative, to make it a more engaging and memorable rich narrative.

The sequenced narrative, as introduced in the definitions section, has characteristics that lend some insights into how to design for rich experiences. This is particularly relevant to Category 5, in which the designer structures the user experience over time. The concept of a logically sequenced narrative can add another layer to this: the designer could incorporate links such as cause and effect (or perceived cause and effect) between the events that make up the product experience. Value-laden narratives can be analysed in terms of how the narrative contributes to delivering a message; this can be linked to several of the categories from the typology. For example in those designs that are experienced with an accompanying narrative (Category 6), a value-laden overarching narrative frames the product; by communicating a value common to all organic products, for instance, the carton of organic milk is framed in this accompanying narrative. Entertainment narratives tend to be more complex and

specific to the medium. For example conflict and climax are important elements to the construction of a story in film and theatre. Additional elements such as agency of objects, conflict, climax, and causal links can be incorporated into the design of the experience to create a rich narrative.

For example, perceived logical connections such as cause and effect links between events appear either by being designed into the product or these connections are perceived by the user. These are of particular interest when a designer wants the product to have an understandable or logical narrative, either for increased usability or to encourage the user to reflect (particularly relevant to Categories 2 and 5). Other elements such as values and emotions can be introduced into the sequence of events, so that the narrative becomes value-laden; this would be of particular use to designers intending to communicate a message or educate through their design, as in design for behaviour change or emotional design (particularly relevant to Category 6). As a consequence, depending on the functions that the designer intends for the narrative, such as conveying information, teaching values, or eliciting empathy, different narrative elements may be more or less relevant.

We plan to develop these ideas further through applying additional elements from the area of entertainment narratives, for example with the introduction of conflict and resolution or a climax to events, but also with more explicit ideas such as assigning a character to the product. Each of the authors has a specific direction and goal to their further work. These plans are:

- To explore how narrative structures like suspense and conflict can enrich the user's emotional experience with products and services;
- How subjective stories foster long lasting relations and connectedness between a person and a design object from an anticipation phase towards an identification phase;
- How the introduction of elements from film can enrich the user's narrative interpretation of a product, thus increasing the gusto in retelling and remembering the product interaction experience.

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