

These Things Called Event: Toward a Unified Narrative Theory of Events¹

What is an event? It seems to be the simplest thing in the world: we are surrounded by events, and in everyday speech we always understand immediately when someone speaks of “an event,” or the “course of events,” or a “non-event.” An advertisement warns of the “must-see TV event of the season,” or a charity organization hosts a “fund-raising event,” or a politician speaks of an “unforeseen turn of events,” and it seems quite natural that these are all somehow the same thing. But it is just this everydayness of the event that makes it such a tricky concept. For how can one begin to give a unified theory of a concept that manifests in such varied forms and in such disparate contexts?

(Computational) Linguists have resorted to calling every distinct action an event or sub-event, sometimes going to the syntactic level of calling each sentence with a verb an event (Bach 1986). This approach has the advantage of allowing the sequence of actions in a text to be coded. It may also be the most “computable” approach since it seems to promise that narrative texts could eventually be coded automatically, or computers could create narratives out of a set of information. Obviously, this approach is well-suited to analyze texts in their entirety. However, we feel that this approach fails to catch what is narrative about these texts and their events, that is, what makes them interesting. It is probably not because narratives transmit information successfully that human beings spend many **hours** day with them (Gottschall 2012). Narratives are so exciting because there is something special happening, something exciting that concerns us or at least **entertain** us.

The cognitive scientist Jerome Bruner summarized this as follows:

What is a narrative? [...] A narrative involves a sequence of events. The sequence carries the meaning [...] But not every sequence of events is worth recounting. Narrative is discourse, and the prime rule of discourse is that there be a reason for it that distinguishes it from silence. Narrative [...] tells about something unexpected, or something that one's auditor has reason to doubt. The “point” of the narrative is to resolve the unexpected, to settle the auditor's doubt, or in some manner to redress or explicate the “imbalance” that prompted the telling of the story in the first place. A story, then, has two sides to it: a sequence of events, and an implied evaluation of the events recounted. (Bruner 1996: 121)

1 The authors wish to thank Bernhard Fisseni, Benedikt Löwe, and the anonymous readers for their many astute and insightful comments. Many have transformed this paper. According to our classifications below, these comments qualify as events.

Not everything that happens is an event in the sense that it surprises the recipient and asks for resolution and evaluation. If we take everything that happens to be an event, then the concept of “event” is impoverished to the point of uselessness. But how to get past the everyday sense of event as “something that happens” is not at all obvious.

The following essay is an attempt to present the breadth of possibility contained in the notion of the “event” that includes the element of surprise and demands interpretation and evaluation. In our attempt, we will present our own model and connect it to some of the major courses in the theory of the event in the context of narrative theory. For our primary audience in this journal, namely computational linguists, this approach may seem opaque since it does not lead to a calculation of events. Here our essay serves a single purpose: to emphasize the need to include the moments of human surprise, doubt, evaluation, and radical transformation in the coding of narrative events. We have to be realistic and acknowledge that we can only offer humble, perhaps imperfect beginnings as to how this could be accomplished. However, we would like to challenge computer scientists to consider ways to detect, account for, and code the events in narratives in a way that captures the fullness Bruner describes.

Peter Hühn has made an attempt to formalize the variance in the uses of the term “event” to avoid obfuscation and equivocation. He distinguishes two categories – he calls them “event I” and “event II” and defines them as follows: “We can distinguish between *event I*, a general type of event that has no special requirements, and *event II*, a type of event that satisfies certain additional conditions. A type I event is present for every change of state explicitly or implicitly represented in a text. A change of state qualifies as a type II event if it is accredited – in an interpretive, context-dependent decision – with certain features[...]” (Hühn 2009: 80). This distinction allows us to speak of events in the everyday sense without compromising efforts to understand events displaying such additional features (Hühn’s event II, which we will describe as event-as-transformation) which will be the focus of this essay.

Within the study of narratives, three different schools of thought can be distinguished. Each of them displays a different attitude toward events. The first describes events as elements in a chain (in line with Hühn’s event I), the second focuses on the disruptive or transformative quality of events (this will be our focus), while the third investigates how events appear if they are viewed from different perspectives (see section 1). It is not necessary that these conceptions be entirely mutually exclusive.

This overview article will focus its critical energy on different theories of transformative events within narrative study, literary texts, theology, psychoanalysis, and everyday narratives. The key complication in this attempt will be that the same actions may appear to be events in some, but not all contexts. The goal is to present a comprehensive model of the event, which might also be useful for overcoming some obstacles for describing events as elements in a chain (attitude 1) and also incorporates insights applicable to the telling of events to an audience (attitude 3), just as our model has profited from these approaches.

One disclaimer is in order. In the context of this journal, the essay may appear **naive**, since it resists a simple application for computational linguistics. The basic suggestion of the core model below that all parts of the event inform each other dynamically may be theoretically correct, but tricky for computational purposes. Nevertheless, we hope to describe the obstacles at stake for a possible computerized model of narrative events.

Before we offer the overall model, we should clarify the three different schools of thought concerning narrative events mentioned above by briefly mapping out their attitude toward events.

1 Schools of Thought about Events in Narratives

There are three basic approaches to events in narratives.

The first school of thought characterizes narratives as chains of elements or events, like a necklace with pearls on a string. We will call this approach an event-as-action approach since it views narratives as sequences of distinct actions. Each event could functionally and self-referentially be defined as an enabler of further connecting elements. Different theorists have favored different names for these elements, ranging from “functions” and “motifs” to “events.” Each element of the chain is located on a syntactical (or horizontal) level. One such chain could be: 1. The hero is introduced. 2. An obstacle emerges. 3. A false friend offers an opinion how to overcome the obstacle. And so on. For each of the syntactical elements of the chain, different specifics can be filled in. Events of this kind are often consistent across narratives and can be identified almost independently of context and location within a narrative text. If one defines “event” as such an **element** of the chain, one could expect a finite number of possible events. Theoretically, this approach can code every sentence (or every verb) as one or more events, and thus **the narrative as a whole**.

A famous model of this approach was offered by Vladimir Propp, in *The Morphology of the Folktale* (1969, originally 1928), in which he identified 31 subtypes of syntactical functions that can be described as such events, including: “absentation, interdiction, violation, reconnaissance, delivery, trickery, complicity” (Finlayson 2012: 22). Different theories give different numbers of possible events for a **sequence** but they tend to agree that the number is limited and thus can be classified. For this group of event theories, the core questions connected with events are typically about the sequencing of the events: they ask which groups of events are expected together, and how these connections can be explained. For a productive model of this approach, see Finlayson (2012); and consider Bod et al. (2012). Approaches that model stories using (mathematical) graphs in which events are the nodes also fall under this umbrella. For a comparison of Propp’s classification and some graph-based approaches see Fisseni and Löwe (**to appear**).

The second general attitude about the event will receive full attention later. For now it is enough to say that an event, according to this school of thought, is that which interrupts or transforms a state of stability or predictability. We will refer to this approach as event-as-transformation approach. A minimum requirement of an event is that it is at

least to some degree unexpected or counter-intuitive from the standpoint of the recipient (about counter-intuitive narrative events, see Norenzayan [et al.](#), 2006).² Hence, a story may contain rather few such events, but their infrequency heightens their importance for all further developments. Event-as-transformation theories have a strong presence in theories of drama since Aristotle's *Poetics* and have also found their way into many cultural theories in modern times. Of central importance for all event-as-transformation theories is the context of the narrative as a whole. The very same textual structure or descriptions of human actions can appear to be an event in one case, but not in another. A further consequence of these event theories is that the event may not appear to be an event at the moment of its occurrence but only afterwards in consideration of the entire context. This is an obvious challenge for computational linguistic approaches.

The third school of thought examines the different narrative voices of who tells what to whom. According to this school of thought, narratives emerge in the *way* that some basic events are related by one voice to another. Accordingly, we will speak of the event-from-a-perspective approach. For this approach, the basic events (on the level of plot or action) exist as events insofar as they take on meaning for the narrating and receiving voices. For example, the simple fact that A kisses B becomes a loaded event if [this told](#) to third party C who has an amorous interest in A. It becomes more complicated if a person D tells this to C out of his or her own personal interest, and the telling may be embellished or not even true in the first place. The study of narrative perspectives and voices goes back to Gérard Genette (1980, originally 1970) and is at the core of modern narratology (see for example Fludernik 1996; Keen 2007, 2010; Koschorke 2012). Many narratologists today do not focus on events at all, but still pay close attention to the different categories of narrative perspectives. Still, this third school of thought could be described as a hybrid of the first two: Each narrative voice frames and thereby complicates the significance of each element on the chain of events, thus elevating some to a different status, not unlike the event-as-disruption in the second set of theories.

It would be possible to speak of a [forth](#) school of thought, namely cognitive narratology as developed by Monika Fludernik, David Herman, and others. However, in regard to theories of events this cognitive narratology does not offer an approach that differs fundamentally from the third mentioned approach.

As indicated, we will focus on our attention to the second approach. Our model of the second approach could be reconciled with the third approach (see the module of "perspective" below), though we will not offer details here. We will consider possibilities for integrating the first two approaches, that is, an event-as-action approach with our event-as-transformation approach by means of the event-mapping as proposed by Fisseni and Löwe ([to appear](#)).

2 One of the most appealing and pragmatic approaches in this school comes from Wolf Schmid, whose five criteria for "eventfulness" will be discussed later.

2 Proposed Core Model of Narratives

We propose that events are at the very center of narratives. Without events, there would be no narratives. We also suggest that events connect all elements of the told sequence (both plot and narrative) not simply as a temporal sequence, but as the looking glass: The other elements matter only in so far as they help to clarify, amplify, or modify the event. Our core assumptions are:

1. The event is a transformation. Events can be an action by an individual, but do not have to be an action.
2. The event constitutes itself in the eye of a beholder. It requires some outside perspective that measures the significance of the transformation.
3. Every event is ambivalent, unfinished. Since the event only exists from the standpoint of a beholder, it is always subject to interpretation and thus ambiguity. To put this paradoxically: The later interpretations or negotiations of the event are part of the event and shape what is has already been.

Whereas this paper largely operates synthetically, interpretatively and at times speculatively, there is experimental evidence that supports some of our suggestions. For example, the study by Norenzayan et al. confirmed the relevance of transformation events. One of the included experiments involved serial reproductions of **fairy-tales** (i.e. telephone games or, in German, *Stille Post*). That study found that fairy-tales with minimally counter-intuitive events would be better remembered and maintained from iteration to iteration than stories with no or maximally counter-intuitive events. This confirms our suggestion that events are decisive for narratives, as long as they can be integrated in an overall context and are not absurd or maximally counter-intuitive (Norenzayan et al. 2006). We will not be able to discuss this study in this context. Its findings suggest that transformative events are what makes a narrative memorable; stories with no events or events that do not **plausible** transform the context in which they occur are less memorable). These assumptions about narrative events are in line with Breithaupt (2012).

We can now present our core model of a narrative event. A minimal definition describes an event as *a significant transformation of the state of an agent from a state A to a state B*. That is, an event changes things in some way: a person, or group of people, or a social construct (such as a city, institution, or cultural landmark) is different after the event than it was before. Usually, this change occurs by means of some sort of intervening force, which we call “I” for intervention. In the story from the New Testament, Saul becomes Paul because God intervenes, so in this case, the value of I is God. A poor woman wins in the lottery and her life is transformed – in this case the improbable pile of money is I. By emphasizing the **transformatory** aspect of narrative, we like to add an element **of significance of meaningfulness** that goes beyond the mere change from A to B. In this respect, our definition of narrative sets the bar a step higher than for example Gerald Prince (Prince defines: “An object is a narrative if it is taken to be the logically consistent representation of at least two asynchronous events that do not presuppose

or imply each other; Prince, 2008: 19). Furthermore, we like to suggest that the event provides the shortest summary of a narrative. There would be no narrative without event.

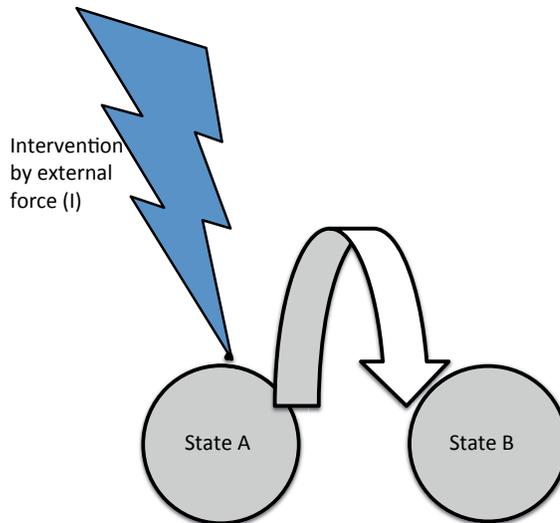


Figure 1: Basic Plot Event

However these three positions – initial state A, final state B, and intervening force – are not yet the complete skeleton of the event. It is necessary to look at the elements outside of the actual change that make it coherent, intelligible, and meaningful, that is – what lets us know an event when we see it.

This significance comes from three related dimensions. The first is the context or frame of reference (C) that registers the difference between state A and B as meaningful. For example, in the religious sphere, the difference between believing in the right god or not is significant; in the material world, the difference between rich or poor is significant. The second dimension here is the cognitive status of the difference (D). The contrast between A and B has to be significant, but also specific. Put differently, there has to be a unity in the difference. Usually this occurs in one-dimensional transformations between comparable states, such as going from rich to poor, sad to cheerful, living to dead, etc. The final element in this general structure of the event is the perspective of the agent, observer, or narrator (P) that is re-oriented by the event. It is essential that the event **changes not only** some material circumstances, but also offers the possibility of new ways of looking at the world, **a way** that would not have been possible without the event. We propose to schematize the impact of the narrative perspective by adding different possible trajectories **for B** of what could happen to B in the future, namely a path that leads to B_1 and another one to B_2 as determined by P.

To summarize, then, the core model of the narrative event looks as follows:

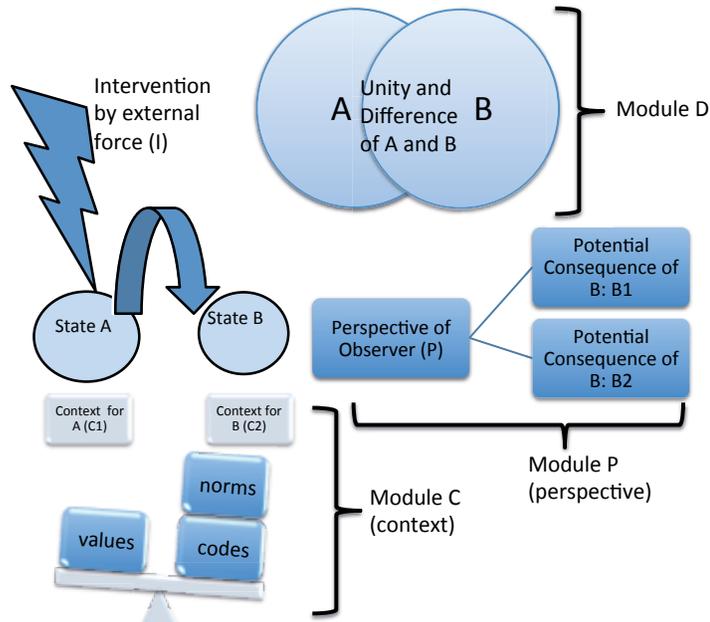


Figure 2: Core Model of Narrative Event

The three modules added to the transformation event here are context (C), the unity within the difference from state A and B (D), and the perspective of the external observer (P) that considers or chooses from possible outcomes B_1 , B_2 , etc. These three modules C, D, and P each assign significance or consequence to the event, but each does so in a different way, as we will discuss below. Hence, these three are in a certain logical competition with each other. Nevertheless, we think that it is not fully possible to reduce these modules to one module alone. In some cases, context matters most, in other cases, a specific observer needs to be considered for whom the event has direct consequence, etc.

In logical terms, this makes computing narrative events difficult. (Didn't we warn you that our goal is not to make things simple?) But just this complexity is needed to do justice to what we consider events. For there may be different cognitive techniques for understanding events; perhaps what we now call the event has had more than one evolutionary and historical origin. However, we will leave the discussion of the possibility of different evolutionary and cultural origins of events for another paper (for some possibilities, see Boyd 2009; Gottschall 2012; Breithaupt 2012).

This model, so far, has little content, but it suggests numerous possibilities for what such content might look like, or for what theories of the event are possible. But it is not merely a matter of substituting values for A, B, I, C, D, and P in order to make an event. Rather, all of these components are not simply additive, but inform each other dynamically. For example, if a different context (C) emerges or is selected by an observer (P), the transformation from A to B can appear to be different. For example, for a devout

Christian, the transformation from poor to rich could be an alarming event, rather than a happy improvement (“It is easier for a camel to go through the eye of a needle, than for a rich man to enter the kingdom of God.” Mt 19:24).

Let us clarify some of the terms by using the two examples of Paul and the lottery, before turning to the history and range of theories of the event.

Transformation from A to B

A and B are defined as features of a human agent, human-like agent, or social construct. In the basic examples cited above, we have two initial states that precede their respective events: Saul the persecutor of Christians, and a poor woman who plays the lottery. The event is thus in a certain sense a simple change, for it transforms a single fundamental aspect of that person’s initial state, and any other significance is secondary to that. Saul becomes Paul, no longer a persecutor of Christians but in fact their most vocal supporter; the woman becomes rich, thus erasing her previous identity as a poor woman. However, the transition from A to B has to be meaningful in some way, perhaps featuring “something unexpected” as Bruner puts it (Bruner 1996: 121). Even in enumerating the states A and B, we are already pointing to the other elements at play – this shows already that we cannot get very far in talking about the event without some implicit sense of I, C, D, and P.

One basic way to describe the complication of the transformation from A to B, without getting into I, C, D and P yet, is to describe it as a before-and-after-event: the story world looks decidedly different from A than it does from B. This is more than just switching from A to B; rather it is a transformation of the agent into the new position B; B is unpredictable from A: the event is the unresolved moment of surprise that Bruner stresses.

One way to present the transformation from A to B is as an “event node,” from which different possible outcomes branch out. In particular, the model developed by Löwe, Pacuit and Saraf (2009) is an excellent candidate since it succeeds in mapping preferences and outcomes considered likely by agents (that is, their beliefs). In that model the authors represent preferred and non-preferred outcomes of events that can be used as building blocks of narratives. Unexpected and expected events are differentiated as well. This model is partially successful at describing transformative events. It successfully integrates the forward-perspective of the agent prior to the event, **that is, from position**. However, from the perspective of the event-as-transformation approach, what would still have to be accounted for is a recognition that the agent in position B may need to be considered separately. There is no comparative moment that measures the significance or meaningfulness of the **before and after** effect. Put differently: the description of action nodes as provided by Löwe, Pacuit and Saraf (2009) does not yet differentiate between trivial choices (which we do not call events) and transformative events, which lead to a real change in the agent.

The Intervening Force (I)

I stands for the force that causes the change from A to B. I itself can be a human subject, a natural event (e.g., **earthquake**), or some form of chance (**lottery**). It could be a psycho-

logical faculty within the agent in some form of psychic drama (the traumatic memory brought out a change from A to B within the Agent). Whatever “I” is, it must have the power to cause the change from A to B (or must at least seem to have this power from a perspective P, see below).

Our two examples diverge considerably when it comes to I: for Paul’s conversion, the element of divine intervention is unmistakable and absolutely central: if Paul is merely a person who changes his mind, the foundations of Western Christianity look quite a bit different. But for the lucky lottery-winner, no obvious agent of her fortune emerged from the story (of course, a fuller description might have more to offer in this area), and it isn’t particularly important *how* we understand the machinations of the lottery, whereas it is very important that we understand something of God’s working in converting Paul. The important thing in this case is the result – the sudden, unexpected wealth, which will surely have important consequences in her life. This illustrates that the variables at play here can vary in their significance in a particular case.

Context (C)

The context anchors the specific action and transformation in a larger frame within which the difference between A and B has consequences. That is, the difference between A and B has significance because it refers to a code that is specific to each sphere (belief in the sphere of religion, wealth in the material world, etc.). Usually, each transformation also carries an implicit value judgment within its frame of reference: In the religious world of Christianity, believing is good, not-believing is bad, etc. The frame of reference can be external to the text (Christianity, material world, aesthetics, etc.) but it can also be a context/frame of reference that emerges within a narrative. For example, within the story world of the New Testament, a new frame of reference emerges that was mostly absent in the Old Testament: belief as the basis of righteousness and salvation. Of course, sometimes competing frames of reference emerge.

The complication of the context or frame of reference is that it does not emerge as a secondary force after the event. One does not first observe a transformation from A to B, and then seek out the proper context to give meaning to that transformation. Instead, the transformation from A to B can only register because of the context. At the heart of the matter lies the relation between the transformation and the context. It turns out to be a co-dependent relation in which each presupposes the other.

The transformation requires a context to register as meaningful. The context, however, is not simply given.³ The transformation invokes certain contexts that could render it as meaningful. Whereas many cases seem less problematic, there are many in which the context is not simply conventional. Already the case of Paul points to this complication. Whereas the matter of belief already bears high significance in the Old Testament, where doubters get punished or taught a lesson, the conversion from a non-believer to a

3 For more on the importance of context, see Gruber 2014, which also includes an extensive summary of event theories by contemporary narratologists in the Genette tradition.

believer is a new affair. Hence, the transformation of Saul to Paul produces a new context, for which it becomes the paradigmatic event. But at the same time the transformation depends on this context for its meaning. In general, every transformation and event has the potential to bring about a new context.

Contexts are never strictly speaking part of actions or messages, but at the same time they are not completely external to them. The same action could always be getting at something different than it seems at first, and thus need to be ascribed to a different context than the obvious one. Every action or message needs a context in order to make sense, but the action does not control the context, nor vice versa. The observer thus cannot say with certainty, based only on an action or message, what its sense or context is. This is also true in the other direction: an observer cannot work out an action from the context alone. Even when everything in the context seems unambiguous and straightforward, each new action is capable of summoning a new context. That context can in turn change the significance of the action, without it having “re-interpreted itself.” The apparently external context affects the act as if from within. From a theoretical point of view, this aporia is unavoidable (Derrida 1985).

The New Testament offers plenty of examples of a state of non-belief (Saul’s A) and a calling to follow Jesus (Paul’s B). Without this new emerging context, it would be possible to read the story of Saul’s conversion as unremarkable, as merely one man in the ancient world changing his mind about something unimportant so many years later, but the powerful context (C) in this example gives this event cosmic significance. In the other example, to win the lottery and become rich is only remarkable given certain conditions of poverty and wealth. It is possible imagine a society in which winning the lottery would be meaningless or even bad, where “poor” and “rich” mean something quite different than what we are used to. For example, one can imagine that the lucky woman is already a billionaire for whom the lottery is of no consequence. But assuming that the woman is in a society more or less like ours, and part of the 99%, it is precisely that social context that makes the transformation significant.

The Unity within the Difference (D)

The transformation from A to B requires some comprehensible unity within the difference. Typically, this means that the transformation occurs on a one-dimensional scale of opposites, such as poor/rich. Many transformations can be evaluated in such a way without stating such a scale explicitly. For example, one can consider a person moving from one place to another. If that person was unhappy with the cold in the first place and pleased with the warmth in the second, the difference happy/unhappy is generated by the unifying axis of mood.

This component of a unity in difference adds coherence to the transformation from A to B. That is, by looking at the event from the outside, it must be possible to form a meaningful contrast between A and B, and to see what the event changed and why it was

significant. The reader or observer must be able to identify the axis along which A and B can both be found, and see the difference between them in those terms. Otherwise the transformation from A to B would either be too little or too huge to be comprehended and would likely be rejected as unintelligible or implausible. The transformation from a non-believing villain to a cheerful merchant, for example, would not usually meet this cognitive requirement, unless some interpretation (from a perspective P, see below) can make sense of it. Many successful narrative transformations occur on one-dimensional scales of polar opposites, such as rich-poor, happy-unhappy, hopeless to hopeful, etc.

Our model lists D as a separate term from A and B to stress the cognitive or interpretative work required to identify D. Nevertheless, once D has been identified it appears to be derived from the transformation from A to B. Still, presentations of events do not usually identify D at the outset, leaving space for interpretation.

In the example of Saul/Paul, the contrast reinforces the literary structure of the New Testament, which emphasizes the power of reversal, the ironic reconfiguration of values, and the dramatic effect of the Christian message. The contrast between Saul and Paul is heightened both because of their similarity and their difference. Paul's attitude towards Christianity is the precise opposite of Saul's, but the fact that he was already a radical, that he has already committed himself to this religious cause, makes the event all the more powerful. For A and B are in the same category, and thus the contrast between them is coherent. (The same coherence is achieved, although on a much smaller scale, in the rhetoric of the calling of the first disciples: Jesus calls James and John, the fishermen, to become "fishers of men" – the image of the fish holds together their A and B states.) If Saul had been an agnostic, or had never heard of the Christians, his vision would have led not to a conversion but to an adoption of Christianity. The A and B states would not be parallel, and the event would not have the same force.

Thus we can say that in an event, A and B are not merely different, but are deeply connected in some way that allows the transformation to be viewed coherently. This is visible also in the second example. The contrast between poverty and wealth is coherent because they are structural counterparts: divergent positions on the axis of money. The lottery winner now has a lot of money, where before she had a little, and that means that the change in question was a matter of getting a new amount of money. It is not that where she once had a little money she now has a little of something else; indeed the states before and after the event have a great deal to do with one another, and when we read about her win, we understand immediately what kind of change is at work. The D element is necessary for presenting as well as understanding the event; it is the catalyst for the possibility of a theory of the event.

One might ask at this point whether this term D is necessary, or whether it is only a special case of C. Like the general context that presents the categories through which the event can be understood, the difference with a unity is a governing concept that makes the event intelligible. For the sake of minimizing the number of terms, it would be possible to eliminate D and declare that such a grounds for comparison or

axis of change is a necessary part of an event's context. We believe, however, the difference in unity requires its own term, because of its unique role in linking the initial and subsequent states to their larger context. The context is a network of values and attitudes that the reader or listener uses to evaluate a narrative; the difference in the unity is a specific concept – say, “wealth” or “faith” in our two examples so far – that allows the context to bear on the event. The element D is thus a kind of ligament that may, in certain cases, be describable as part of the overall context, but not necessarily. Indeed, this demonstrates that the elements of our model are not rigid categories, but overlapping, dynamic interactions to be drawn on as fits the given case. This will be even more clear in the ensuing discussion of perspective.

Perspective (P)

Sometimes an event can only register as significant when it is seen from a specific human or human-like perspective. When Odysseus reveals his identity after his return to Ithaca at the very moment he kills Antinous, this revelation is only significant from the perspective of Antinous. Odysseus and the listener or reader already know who he is. However, for Antinous this new knowledge means that he will not take the place of the king of Ithaca, but be his victim.

Considering the specific perspectives involved allows an understanding of whether a transformation from state A to B is significant: the event changes the future for some agents, and could thus be considered an event from their perspective. For Antinous, the revelation of Odysseus' identity changes his outlook about the future. Instead of a future B_1 (becoming king of Ithaca), another future, B_2 (getting shot) becomes acutely possible.

The perspective may be the one of the agent transformed by the event, but it may also be a third party, observer, or narrator. For example, an event that changes the mood of a teacher can be significant for a student about to take an oral exam. Hence, the student's predicted success changes from B_1 to B_2 , according to the teacher's mood change. Hence, the event becomes meaningful only from the perspective of the student (P), even though the teacher seemed to be more directly involved. This is one example where mere calculations of the context or the unity of the difference would likely miss what determines the significance of this event.

It may even be the case that a contrast between two perspectives is necessary to register and comprehend an event, as Rick Altman has suggested (Altman 2008). But we will not be able to follow this line of thought here, nor develop the concept of perspective and the “dual-focus narrative.” For further insights concerning perspective-taking, see Fludernik (1996), Keen (2007) and Zunshine (2012).

These are the general terms that a theory of the event must fulfill, and although it is not as simple a matter as substituting values for these terms, we can still examine the permutations of them to see how different thinkers in a wide range of fields have formulated the event. As was particularly clear in the case of the unity with the difference, the relations between these terms is complex. The modules C, D, and P are not distinct in every case, and may not even all be meaningfully present, but they contain the

myriad possible forms for those external elements that determine an event. Before we problematize this model further, it is useful to look at some examples of event theories within different discourses, to see how these terms play out.

3 Christianity: The Miracle

The prototype of the Judeo-Christian event is the miracle. A miracle is an occurrence which cannot be explained by natural causes, and whose origin is therefore understood to be divine. To put this in the basic structure of the event, the initial state A stands for that natural course of the universe, the final state B represents a better world in which God has been made more immediately present, and the intervening force I is divine will. A miracle is the suspension or disruption of natural law for the sake of the exercise of God's will.

Biblical stories are filled with such moments: for example, Moses parts the Red Sea, in violation of the laws of hydromechanics, because it is God's will that the Israelites should escape Egypt, and so God works through Moses to suspend the natural order in accordance with which the water was lying flat, in order that His will might come to pass. Such an event is disruptive because it is enacted by a force outside of nature and thus, in some sense, beyond understanding. For Christian thought, this supernatural and extra-intellectual capacity – in other words, this capacity to turn A into B – is central to how God is described.

Theory of the divine event has been one of the bases for Christian interpretation of the New Testament: indeed, the life, death, and resurrection of Jesus Christ have often been formulated as an event that disrupts the course of the world. (A = non-salvation; B = salvation; I = Christ's resurrection.) Thus Christ's claim that he comes not to abolish the law but to fulfill it (Mt 5:17) is read as the proclamation of an event in the world's salvation history: the law that was given to the Hebrews reaches in Christ its fulfillment, and is thus not simply eradicated but transformed. (This is a particularly difficult instance of the question of what becomes of A after the event.)

One particularly important and widely discussed form of miracle is that of conversion, as we saw in the example of Paul, in which the suspension is of a mental, not purely a natural, order. In this case, we substitute the values: A = non-belief; B = belief; I = divine inspiration. Faith provides the unity in the difference D, while, as we saw above in the example of Paul, the conversion has its part in constructing its own soteriological context C while the literary structure of the Biblical telling determines the perspectives that come to bear on Paul's conversion.

For Judeo-Christian thought the question of how God is present in the world is a central concern. The event, by formulating God and His works as existing outside of nature, and yet capable of effecting it through miracles, both impressive and personal events of which conversion offers the paradigm, has been a key concept for how Judeo-Christian thinkers over the centuries have understood God.

4 Alain Badiou: The Big Event

The French philosopher Alain Badiou has been a major figure in recent discussion of the event, and his theory of the event draws openly on the religious tradition. Badiou revises the traditional view of conversion, in the Pauline model, as an individual reflection of a universal divine intervention, to basically discard the underlying universal history, and argue that from the individual, psychological experience of the event, a concept of the universal is possible.

Indeed, one of Badiou's central philosophical concerns is to ask how it is possible to constitute a subject – that is, an individual in full possession of agency – something that he feels recent philosophical movements have failed to do. He calls the event an “ontological rupture” and argues that it forms a subject out of something that merely exists. So: A = mere being ; B= subject; the value of I is the tricky part. As we will see, I is neither simply external nor internal to A. The intervening force I *actualizes* some latent aspect of A.

In his book *Saint Paul: The Foundation of Universalism* (2003, originally 1997), Badiou takes up the apostle Paul as the preacher of the universalizing event. In his reading of Paul's epistles, Paul dispenses entirely with most of the usual New Testament context, and announces the resurrection of Jesus as “pure event, opening of an epoch, transformation of the relations between the possible and the impossible.” (Badiou 2003: 45) Paul's famous proclamations that Christ's ministry is intended for all humanity, not only the Jews, becomes for Badiou the foundation of universalism, for the resurrection-event fundamentally transformed the nature of the world. Thus Paul's call to accept Christ is the call to be likewise transformed with the universe.

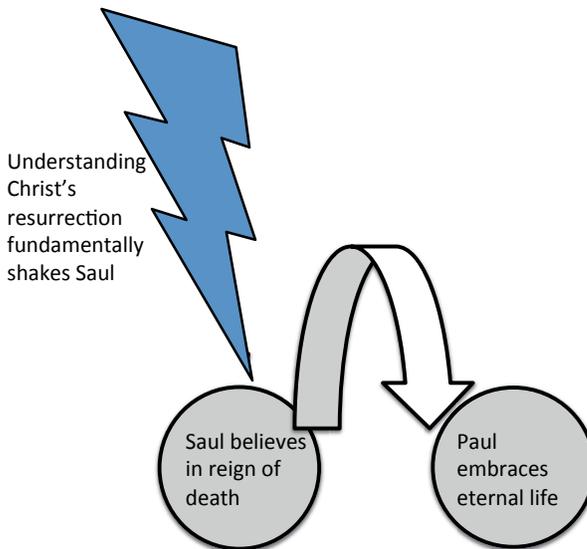


Figure 3: Saul becomes Paul

The choice of Paul and the emphasis on the universal history of mankind might suggest that Badiou is writing only within the Christian tradition; but what he calls the “fable” of Paul is taken only as an illustrative example, and in many ways that book is exceptional for Badiou’s theory of the event.

In an earlier major work, *Being and Event* (2007, originally 1988), Badiou takes a mathematical approach, and seeks to stay clear of religious language. He writes: “[t]he event is not a miracle. What I mean is that what composes an event is always extracted from a situation, always related back to a singular multiplicity, to its state, to the language connected to it, etc.” (Badiou 2007: 100) This addresses the deep question of the status of A and I in our model of the event: for Badiou, I is born out of A. His argument for this is extremely complex, and has been heavily criticized by mathematicians and philosophers alike. In essence, he applies set theory to ontology, positing sets that are “dominated” (which means here something like determined) by elements that they do not contain. Since this is true of every set, it is also true of the set of what is accessible to a “mere being” – that is, what is not constituted as a subject – and Badiou thus posits a latent subjectivity to mere being, which is activated by the event.

How does this work in concrete terms? When Badiou takes up more particular cases, the difficult abstractions give way to an argument of beauty. He delineates four contexts in which such an event is possible: love, science, politics, and art. Here Badiou is turning towards an intuitive sense of what the event ought to be: something that transforms a person into something they could never have been otherwise, **but not** by divine intervention (notice that religious experience is absent from the list), but rather by an awakening of some capacity latent in the initial state A. A human being who is not in love is defined in part by the capacity to fall in love, and the experience of doing so, activating that capacity, constitutes a different kind of person – this is what Badiou means by the subject. The same model applies to the investigation of the natural world (science), engagement with the social structure (**politics**) and an encounter with the aesthetic (art).

The most powerful point in Badiou’s theory of the event is that it is focused on the psychological experience of the individual, and that the event is not a catalyst for change, but rather a catalyzed transformation from within. B is latent in A, and I is the name for the contextually-determined catalyzing forces to which A has always had possible access. Thus Badiou’s theory offers a new twist to our core model – it suggests that I, as formulated, is not necessary for an event, that the state A contains already the potential to make its own event.

5 Sigmund Freud: The Traumatically Delayed Event

The cases of Christianity and Badiou have helped us to examine a couple of potential complications within A, B, and I in our core model. The following case will allow us to understand the temporal dimensions of the event better. This will lead us to consider the perspective of an agent (P).

In his remarkable revision of *The Interpretation of Dreams* (2010, originally 1900), Sigmund Freud adds a force that goes against the positive force of wish-fulfillment. This is the force behind the repetition drive (*Wiederholungszwang*) that Freud introduces in *Beyond the Pleasure Principle* (1990, originally 1920). Freud here suggests that certain powerful (usually horrific) episodes in one's life can overcome the psychic protective mechanisms and penetrate and infiltrate the psyche. These events are called traumatic because the psyche cannot properly handle them, which means they cannot be interpreted, understood, and filed away as memories. Instead, they stay present. Freud's implicit frame of reference was his study of traumatized WWI veterans. Trauma, in this sense, is a memory disorder: The past cannot become the past and thus cannot be remembered, but instead remains present. Whereas most aspects of Freud's work have been disputed or dismissed by empirical psychologists, his theory of trauma provides the central elements of what is described today as posttraumatic stress disorder or PTSD (Leys 2000).

Freud's theory of trauma is an event theory *avant la lettre*. In the language of the core model of the event: A healthy subject A is overwhelmed by an external force I. This leads A to become a traumatized subject B for whom the disrupting event remains present. That is, for B, the transformation from A to B remains present, continues to be in the present and future. The state B is the one in which the transformation from A to B is repeated. The traumatized victim constantly relives the attack.

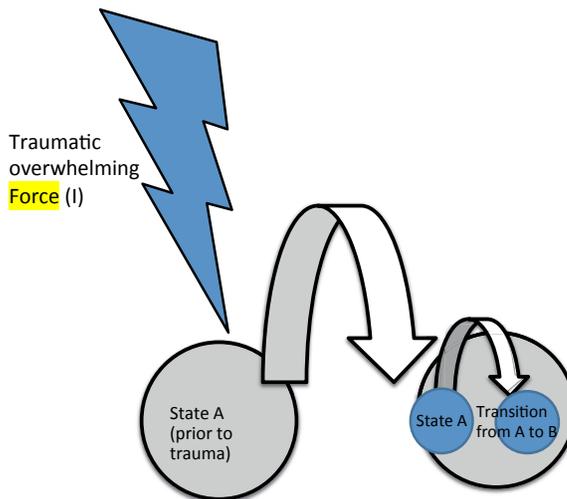


Figure 4: Traumatic Event

Some Freud scholars, most notably Jacques Lacan, have added another twist to Freudian event theory. These scholars suggest that the entire transformation from A to B with the intervention of I is so deeply unresolved that it can only be established retrospectively from a narrating perspective. The force of trauma is such that it is not clear what the intervening force and its effect have been. In that sense, the transformation with all its components is not a fact of the past, but something that come to fullness only in the

future, as in the future perfect tense: the event will have been (Lacan 1988). The key claim inherent in this understanding of trauma is that the decisive factor is not what the actual traumatic intervention truly was, but rather which “narrative” can be established in the future that makes sense for the subject (or observer) to explain his or her suffering.

Within the core model of the event, this Lacanian interpretation of trauma promotes the narrative perspective (P) to the central position of the event. It is the narrative perspective that establishes and perhaps even invents the retrospective transformation from A to B with intervening I in such a way to make sense of what B has become. The temporal order of A coming before B is now reversed. For P the starting point is B and the question for P is which A we can deduce as having preceded B.

For our core model of the event, this emphasizes that the narrative perspective (P) is not an afterthought of the event but can be seen as the starting point of its establishment.

6 Narratology

Narratology, the study of stories, how they are told, written, read, and interpreted, has long had the event as one of its central concepts. Indeed, the event is often posited as a defining characteristic (if not *the* defining characteristic) that distinguishes narrative from other language forms, such as description or enumeration.⁴ But it is difficult to generalize about how narratologists have described the event, since different narratologies have used such varied approaches to the event. Some recent approaches, most notably that of Albrecht Koschorke, have even displaced the event from any central position, building a theory of narration around perspective and perception instead.

Traditionally, narratologists point to Aristotle’s *Poetics* as the foundational text in the study of artistic language. Aristotle defines an event as an element in the plot of a story, and classifies plots as either transitions from good to bad, or bad to good (*Poetics*, 1451a). This is recognizable as a combination of the first and second attitudes toward narrative outlined at the beginning: an event is one element in a chain, but also something transformative. The best plots, according to Aristotle, are those whose links between actions are surprising and remarkable, and yet adhere to clear rules of causality. The event-catalyst, I, must be grounded in a clear connection between A and B (cause-and-effect, for instance), but still yield a B that is surprising to the audience. Thus, for Aristotle, to see an event as part of a chain, it is still necessary to understand the event as disruptive, and as such he explores the links between events to root out the mechanisms of how a plot works.

Aristotle does not use the vocabulary of contemporary psychology, but he pairs his theory of the surprise with an understanding of perspective-taking. The surprise can be

4 This is to use “language” in the broadest sense: a narrative need not be limited to words on a page. It may also be found on stage, in the cinema, on television, or in any number of other media. The category of narrative we are employing here means simply any form of storytelling built around events.

explained as a fork of two trajectories: what the character can predict will happen and what actually happens diverge (*Poetics*, 1452a). Our core model of narrative events would describe this fork by means of the narrative perspective P. The fear and pity that Aristotle wants an event to inspire are only possible given a particular perspective on the part of the reader or viewer.

This approach has had an enduring influence, as many thinkers have followed Aristotle's lead. In the twentieth century, the novelist E.M. Forster's definition of a plot is indebted to the Aristotelian concepts. Forster's example contrasts two presentations of the same occurrence. "The king died and then the queen died" is, in his account, not a plot. But to say "the king died, and then the queen died of grief" is, because it links the two occurrences. Thus the plot, in the sense of a series of occurrence, requires a connection between its constituent parts. Unlike in Propp's formalism, the emphasis for Forster is not on the occurrence itself, or the syntactic series of occurrences, but on the narrative syntax that holds separate occurrences together, thereby bringing about an event: the string, in the metaphor of the pearl necklace. We will return to the question of causality in discussing more recent narratological thought.

A generation after Forster, with the rise of structuralism, disruption models of the event became the most visible. One tremendously important such model is presented in Jurij Lotman's essay "The Structure of the Artistic Text" (1977). Lotman argues for a spatial metaphor for the structure of a text, transforming textual analysis into a topological endeavor. And among the constituent elements of a text (e.g. description, exposition) the plot "can always be reduced to a basic episode – the crossing of the basic topological border in the plot's spatial structure" (Lotman 1977: 238). If we imagine the space of the novel as consisting of a set of demarcated subspaces, the event (the "basic episode") is the crossing of a border from one to the next, whereas something like description remains within a single subspace. In terms of our core model, this foregrounds C as a space against which action can be plotted – the coordinates that identify two spaces, A and B, and the border between them. Lotman's formula may offer the richest potential for computational linguistics, as a topological formulation of the categories in our model of the event would allow it to be reapplied to a number of possible contexts.

Lotman's semio-spatial structure has another implication, which rests on the second, moralistic, sense of the word "transgression" (Lotman's Russian word, *prestuplenie*, whose elements mean "across" and "stepping," like those of "transgression," is the word translated as "crime" in the title of Dostoevsky's novel -- hence, the dual sense may be said to be more flagrant in Russian). Following Lotman, some narratologists (such as Gruber 2014) have defined the event as a transgression of a taboo or a violation of a norm. This definition may indeed capture many events, but has the disadvantage of requiring a highly abstracted understanding of what constitutes a norm. It is not clear to us that this new element is necessary in a core model of the event, even if it may be illuminating in particular cases.

Since Lotman's structuralist model, other narratologists have asked what defines such a border as an event crosses. In other words: if an event stands out as a disruption in a series of plot elements, what does it mean to be disruptive? For example, Wolf Schmid (2003) argues for five criteria, whose presence or absence in various degrees determines "a sliding scale of eventfulness" along which points of plot can be located. (Schmid 29) They are: relevance, unpredictability, effect, irreversibility, and non-iterativity. The strongest kind of event, then, in Schmid's terms, is significant in the world of the story, is capable of surprising the reader, has meaningful ramifications, and cannot be undone or repeated. These criteria can be tremendously helpful, and in particular those of irreversibility and non-iterativity can be rigorously quantified in the context of a narrative, but how such a term as relevance could be formulated outside of the interpretative context of literary studies is not clear. These examples show that narratology, while deeply invested in the event, has also been torn between the three models of the event presented at the outset, although the event-as-disruption model, as the analyses of Lotman, Schmid, and many others suggest, seems to offer the richer but also more difficult possibilities.⁵

7 Conclusion

The question seemed so simple, and yet the answer is anything but. We have outlined a general model of the narrative event-as-transformation with six elements: an initial and final state; an intervening force; a context; a unity within difference; and a perspective. Of these, the first three have to be present, while the second three can substitute for each other. There will always be state A and state B with an intervening force I, while context, unity within a difference, and perspective can each be understood as modules that grant significance to the transition. We believe that analyzing an event through the lens of these six categories offers the best chance for understanding both its structure and its significance.

In the introduction, we recounted three basic different academic approaches or even cultures to define an event. The question arises: can the first approach (the event-as-action approach that lists all actions syntactically in a string) and our approach of the event-as-transformation be reconciled? For this discussion, we turn to the description of narratives by Fisseni and Löwe (to appear) from a computational models of narrative perspective. Can the event-as-transformation be captured by the event-mapping?

We should first note that there is Propp-bias in computational linguistics in general, which may have led to the omission of the event-as-transformation in the radical sense we outline above. Propp's only example was fairy-tales. Fairy-tales are limited as narrative examples in many respects (among other things, they are highly ritualized, have

⁵ Indeed, so deep is the tension between these different conceptions that Gruber (2014) has suggested using the term "event" to refer to things outside of the plot altogether -- for instance at the levels of *récit* and *narration* -- but still bearing on the narrative act. Gruber's discussion of these event-like interferences is quite rich, but we have opted not to address it here, as it seems to introduce a confusing equivocation to our terminology.

a limited repertoire, and display little or no psychological development of characters). Propp's model succeeds for the deliberately constricted set of texts he analyzes, but a fuller model of the event, such as we have proposed here, must account for the breadth of what narrative can be: a fairy-tale or novella built around a single scene, a lengthy novel with any number of transformative events, or the gossip-stories of social chit-chat.⁶

Fisseni and Löwe use event nodes to describe events in the Proppian sense. However, they also include super-events that involve various events and sub-events. For example, the super-event "fishing plan" in a Russian fairy-tale involves multiple, complex steps, such as "Shabarsha decides to go fishing with the intent to earn money to support his master" (23). These super-events look a bit like what we have called events (that is, events-as-transformations): they are fewer in number, structurally complex, and appear to be tremendously important to the story. But they differ in the crucial sense that super-events subsume other events *hierarchically*, not because they are more dramatic, counter-intuitive, or transformative. In other words, their place in the event-mapping model still does not address what we have outlined as the defining features of the event, even as it raises some events above others.

Nevertheless, Fisseni and Löwe implicitly account for the event-as-transformation when they describe their experiment of asking untrained subjects to summarize some of the Russian magic fairy-tales. Fisseni and Löwe notice how the "central events" (18) emerge in the summaries. These are coming close to what we call the event-as-transformation. One needs to recall here that the Russian magic fairy-tales that Propp and Fisseni and Löwe use do not contain psychological changes of state. Instead, they contain changes of state that play on emotional themes: happy-sad, free-unfree, and poor-rich.

In the given narratives, the heroes face obstacles that they need to overcome. For example, Shabarsha wants to end the poverty of his master and then needs to face the challenges of the little devil. These challenges and responses contain an event-as-transformation from state A to B (from poverty to wealth and from challenge to victory), by means of the clever intervention of the hero. Here, the super-events, seen through the lens of human re-tellers approach our event-as-transformation. This experimental evidence suggests that the event-as-transformation model is intuitive to human listeners, who are drawn (at least in such simple narratives) to transformative events, and remember them best (in line with Norenzayan et al. 2006).

These experimental subjects reveal that a narrative is not merely a sequence of data. It is intuitive that a great literary narrative does more than inform its readers about a sequence of plot points; a folk-tale's power to foster a sense of belonging in a community has little to do with the information the teller transmits to his or her listeners; courtroom testimony succeeds or fails not only because of facts it presents, but because of everything

⁶ In the German context, the bias toward novellas pre-dates Propp by a century. Goethe's description of a novellas as an "unerhörte Begebenheit" (unheard-of event) is a frequent point of departure for studies of the intersection between the novella and the narrative event in general.

else that goes into the report. This *everything else* is what Bruner was talking about. It is also why we are so fascinated by narratives. Something that seemed to be fixed can be different. Events, therefore, the defining attribute of a narrative, cannot be captured adequately by reductionist accounts, such as Propp's formalism, or Hühn's "event I," which would eliminate the non-informational aspect of narrative that is of such great importance not only to literary scholars, but more importantly, to all people who are drawn to narratives simply because they are interesting.

Hence, whereas the node-based description of Fisseni and Löwe succeeds on the descriptive level, it could not, at this point, be used to produce successful narratives. To be sure, this is also not the intention of the authors, their intention is to provide an tool for comparing different representations of narratives. For the comparison, a metric for the importance of different events which occur (or are left out) in the representations is necessary (Fisseni and Löwe's evaluation phase, section 3.3). Here, we propose that this metric needs to add an additional contextual element to account for the larger significance of the narrative and distinguish between the occurrence of more or less "central events".

We said at the beginning that it was important to distinguish events from mere happenings (as in Hühn's two types of events), and to consider only true events as constitutive of true narratives: we hope it is now clear why that insistence is fundamental to our theory. The examples we have offered – Saul's conversion, Badiou's constitution of the subject, an individual's traumatic experience – are not about *what happens*, they are about what it means, how it felt, where it leads. The facts of the matter don't do justice to the event, and for that reason it is necessary to introduce to additional terms of our model, and, for the same reason, in our view, a model that lacks those or similar terms fails to do justice to the power of narrative.

As the survey of thought about events, through psychoanalysis, philosophy, religion, and literary studies, was meant to indicate, there is no shortage of possible applications for a well-developed understanding of the event, and in particular a computation model would be a tremendous service to these disciplines. Moreover, some empirical evidence suggests that the event-as-transformation may be a central cognitive feature of how the human mind processes the world, and a pre-requisite for any narrative capacity. If events are transformative, as we hold, narrative thinking is a thinking in alternatives and retrospection. In a narrative world, everything might stay different.

Bibliography

- Altman, Rick (2008). *A Theory of Narrative*. New York: Columbia University Press.
- Aristotle (1997). *Poetics*. Translated by Malcolm Heath. New York: Penguin.
- Bach, Emmon (1986). "The Algebra of Events". *Linguistics and Philosophy* 9:5–16.
- Badiou, Alain (2003). *St Paul: the Foundation of Universalism*. Translated by Ray Brassier. Palo Alto, CA, USA: Stanford University Press.
- Badiou, Alain (2007). *Being and Event*. Translated by Olive Feltham. New York: Bloomsbury Academic Press, 2007.
- Bod, Rens, Bernhard Fisseni, Aadil Kurji, and Benedikt Löwe (2012), "Objectivity and reproducibility of Proppian annotations". In: *The Third Workshop on Computational Models of Narrative*, Edited by Mark A. Finlayson, Cambridge, MA, USA, 17–21.
- Boyd, Brian (2009), *On the Origin of Stories: Evolution, Cognition, and Fiction*. Cambridge, MA, USA, and London: Harvard University Press, Belknap Press.
- Breithaupt, Fritz (2012), *Kultur der Ausrede*. Berlin: Suhrkamp.
- Bruner, Jerome (1996), *Culture of Education*, Cambridge, MA, USA: Harvard.
- Derrida, Jacques (1985), "Signature, Event, Context". In: *Margins of Philosophy*. Translated by Alan Bass. Chicago, IL, USA: University of Chicago Press.
- Finlayson, Mark Alan (2012), "Learning Narrative Structure from Annotated Folktales." PhD diss., Massachusetts Institute of Technology.
- Fisseni, Bernhard and Benedikt Löwe (to appear). "Event mapping for comparing formal frameworks for narratives". To appear in *Logique et Analyse*.
- Fludernik, Monika (1996), *Towards a 'Natural' Narratology*. London, New York: Routledge.
- Freud, Sigmund (2010), *The Interpretation of Dreams*. Translated by James Strachey. New York: Basic Books.
- Freud, Sigmund (1990), *Beyond the Pleasure Principle*. Translated by James Strachey. New York: Norton, 1990.
- Genette, Gérard (1980), *Narrative Discourse: An Essay in Method*. Translated by Jane Lewin. Ithaca: Cornell University Press.
- Gottschall, Jonathan (2012), *The Storytelling Animal: How Stories Make Us Human*, Boston: Houghton Mifflin Harcourt.
- Gruber, Carola (2014), *Ereignisse in aller Kürze: Narratologische Untersuchungen zur Ereignishaftigkeit in Kürzestprosa von Thomas Bernhard, Ror Wolf und Helmut Heißenbüttel*. Bielefeld: Transcript Verlag.
- Herman, David (2002), *Story Logic: Problems and Possibilities of Narrative*. Lincoln and London: University of Nebraska Press.
- Hühn, Peter (2009). "Event and Eventfulness". In: *Handbook of Narratology*. Edited by Peter Hühn, John Pier, Wolf Schmid and Jörg Schönert. Berlin and New York: Walter de Gruyter, 80–97.
- Keen, Suzanne (2007). *Empathy and the Novel*. Oxford and New York: Oxford University Press.
- Keen, Suzanne (2010), "Narrative empathy." In: *Toward a Cognitive Theory of Narrative Acts*. Edited by Frederick Aldama. Austin: University of Texas Press, 61–93.

- Koschorke, Albrecht (2012). *Wahrheit und Erfindung: Grundzüge einer allgemeinen Erzähltheorie*. Frankfurt: Fischer Verlag.
- Lacan, Jacques (1988). *The Seminar. Book II. The Ego in Freud's Theory and in the Technique of Psychoanalysis, 1954-55*. Translated by Sylvana Tomaselli. New York: Norton; Cambridge: Cambridge University Press.
- Leys, Ruth (2000). *Trauma: A Genealogy*. Chicago: University of Chicago Press.
- Lotman, Jurij M. (1977). *The Structure of the Artistic Text*. Translated by Gail Lenhoff and Ronald Vroon. Ann Arbor: University of Michigan Press.
- Löwe, Benedikt, Eric Pacuit and Sanchit Saraf (2009). "Identifying the structure of a narrative via an agent-based logic of preferences and beliefs: Formalizations of episodes from: Crime Scene Investigation™". *Proceedings of the Fifth International Workshop on Modelling of Objects, Components and Agents, MOCA'09*. Edited by Michael Duvigneau, Daniel Moldt. Hamburg: Universität Hamburg, 45–63
- Norenzayan, Ara, Scott Atran, Jason Faulkner and Mark Schaller (2006). "Memory and mystery: The cultural selection of minimally counterintuitive narratives". *Cognitive Science* 30.3:531–553.
- Prince, Gerald (2008). "Narrativehood, Narrativity, Narratability". In: *Theorizing Narrativity*. Edited by J. Pier and J. Á. García Landa. Berlin: de Gruyter, 19–27.
- Propp, Vladimir (1969). *Morphology of the Folktale*. Translated by Laurence Scott. Austin: University of Texas Press.
- Schmid, Wolf (2003). "Narrativity and Eventfulness". In: *What is Narratology? Questions and Answers Regarding the Status of a Theory*. Edited by Tom Kindt and Hans-Harald Müller. Berlin: de Gruyter, esp. pp. 17–35.
- Zunshine, Lisa, (2012): *Getting Inside Your Head: What Cognitive Science Can Tell Us About Popular Culture*. Baltimore: Johns Hopkins University Press.