Causal Understanding and Narration

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Abstract: Narrative understanding supposes the viewer's mental activity of constructing causal links, an activity biased by emotions and other mental or psychological circumstances, making the causal links we construct while watching the film sometimes quite different from those the viewers obtain as a consequence of a thorough logical analysis of a narrative. This article argues that this is not the difference between "misunderstanding" and "adequate understanding," but rather the fact that the viewers cannot discount emotional bias when talking about narrative causality. Because most films are made to be seen and understood after one viewing, they are meant to be understood through emotionally biased causal inference rather than by the pure analytical mind. In order to understand how emotionally biased causal thinking works, it is necessary to conduct empirical research with real audiences. Theories of narrative understanding can only be corroborated by such empirical research.

Keywords: audience, causality, cinema, emotion, empirical research, narration

This articles seeks to set the theoretical ground for an empirical study of causal understanding of cinematic narratives. It investigates two issues, one regarding the question of whether there exists individual and subjective perception of narrative causation as opposed to "pure causal analysis," and the other regarding the various types of causal thinking. The research has already been started, and the first, preliminary results were communicated during the Society for Cognitive Studies of the Moving Image (SCSMI) conference in Copenhagen in 2009.

Two Approaches to Narrative Research

Instead of entering into the endless jungle of definitions of narrative and narration, for the purposes of this article I use a minimalist concept of narrative. I agree with H. Porter Abbott that "the field of narrative is so rich that it would be a mistake to become invested in a more restrictive definition that requires either more than one event or the sense of causal connection between events" (2008: 12). I show that the requirement for causal connections is unnecessary in the definition of narrative because human understanding of

time per se already inextricably includes causal connections. Immanuel Kant's remark on the idea of causation is especially valid with regard to cinematic narration where the verbal cues of causal connections are most of the time missing:

> From all this it is obvious that the principle of cause and effect is the principle of possible experience, that is, of objective cognition of phaenomena, in regard to their relations in the succession of time. . . . The principle of the relation of causality in the succession of phaenomena is therefore valid for all objects of experience, because it is itself the ground of the possibility of experience. ([1855] 1980: 149–150)

In other words, no change in time is conceivable without the a priori concept of causation. We cannot even notice temporal change without referring to causal connections. Even where we should not rationally suppose causal connections, we often construct them. Thus, if the concept of temporal change necessarily involves the idea of causation, for a definition of narrative it is sufficient to say that a narrative is a representation of at least two events that follow each other in time so that the second event appears in some respect as a transformation or variation of the first.

To follow a cinematic narrative the spectator constructs causal relations by merely watching one event following another—that is the process we have to examine to understand how causal inferences are born. There are two possible approaches to this question. The first is the classical narratological one that supposes the audience's construction of the causal system of the narrative is not arbitrary but rather facilitated or even manipulated by the narrative structure. Supposing that every viewer has the same basic mental build up, in normal conditions the overwhelming majority of the viewers will have the same basic understanding of the narrative. Therefore, what researchers of narrative look for is how causality, as the basis of narrative understanding, is built into the narrative. What role does causation play in the narrative construction? The other approach has to do with the observation of individual spectators: What are the mental processes that lead to causal inferences while watching a film? This approach needs empirical research in the fields of cognitive psychology and empirical aesthetics. This approach supposes that beyond the basic mental operations, spectators have different mental and psychological dispositions that may or may not be dependent on their cultural backgrounds. Even where cultural differences do not play an important role, we interpret simple narratives in different ways. What is the cognitive basis of these differences? Why are certain narratives incomprehensible for some intelligent and highly qualified people, while for others they make complete sense? Is it true that differences of interpretation are individual or cultural contingencies constructed on the common basis of narrative understanding

or are they the product of the multiple ways in which we construct causal relations? We cannot talk about a narrative's structure as an objective thing unless we can answer these questions. For a valid theory of narrative causation, it is important to adopt both sides: use narrative theory to construct categories, and have the theories tested empirically in the actual process of narrative understanding.[1]

Is it true that differences of interpretation are individual or cultural contingencies constructed on the common basis of narrative understanding or are they the product of the multiple ways in which we construct causal relations?

Narrative Causation

It immediately becomes clear that there are some important disagreements among theorists as to how they conceive of narrative causation as built in the narrative structure. For the purposes of this article, I only use one thread from this vast debate, one that leads to the recognition that there is something in the theory of narrative causation that could be examined empirically.

Noël Carroll supposes that although causal connections in a narrative are not to be understood in the strictest, deterministic sense of the term, narrative understanding

> is a matter of seeing how the states of affair that obtain in the narrative are possible, given the earlier events in the narrative. This involves, in short, recognizing that the earlier events presented conditions for the realization of the later events. Specifically, it involves recognizing that the earlier events were causally relevant conditions (or contributions thereto) for the occurrence of the pertinent later events in the story at hand. (2001: 38)

Events in a narrative for Carroll are causally linked, but in a rather general "underdetermined" way. Earlier events make it possible for later events to occur but in no way do they determine them as absolute necessities. What he proposes is that events in a narrative may or may not by necessity connect causally, but they constantly open paths for other events to happen and close others. When one of the possibilities takes effect, we, retrospectively, consider the chain as a narrative. Is this the distinctive feature of a narrative? What Carroll seems to describe here is retrospective causal explanation. At every moment in our lives we find various sets of circumstances that raise or lower the probability of later events. And when we focus on a series of events, on a finite number of unified elements, we must do it through a retrospective causal explanation—we cannot know for sure what will happen in advance, or, in other words, we cannot have prior knowledge about actual event sequences that will occur. Understanding a change involves causal connections, but understanding a change that already took place is an a posteriori act based on

empirical knowledge of the forces present at the moment of the change. Understanding of the causal relations of events can be only a retrospective reconstruction thereof, and while we are in the midst of this process, what we can see are only conditions allowing or prohibiting specific outcomes. What Carroll calls the specificity of narrative causality is nothing but our unavoidable everyday experience and our natural way of thinking about any kind of temporal change. One can agree with Carroll that, at the end of the day, all narratives are causal, but he is talking about narratives in terms of the temporal changes of a "unified subject" that involve causal relations. As long as we agree that our thinking about past and future events is fundamentally narrative—a claim that narrative psychologists would immediately subscribe to—Carroll's argument holds, but we need to go further. Because stories depict temporal changes, understanding them involves mental processes necessary to understand temporal change. Someone could rightfully ask: Is this all we can say about narrative understanding, or is there more to it? Is there something else that makes a difference between understanding a fictional narrative and an account of a series of causally linked events that followed one another at a certain period of time?

David Velleman (2003) asked this question, and noted with regard to Carroll's proposition that the general notion of causality, although a necessary ingredient in all narrative, cannot be the distinctive feature of narration. Although a narrative without causal connections makes no sense, according to Velleman, the specific nature of narrative understanding has nothing to do with understanding those connections:

> *Thus, the audience of a story understands the narrated events, first, because it* knows how they feel, *in the sense that it experiences them as leading it through a natural emotional sequence.... The audience may or may not understand how the narrated events came about, but it understands what they mean—what they mean, that is, to the audience itself in emotional terms. (19)*

Velleman's proposition is that the specificity of a narrative lies in the emotional interpretation of the event sequences rather than in the understanding of their causal connections. It is emotional understanding ("knowing how it feels") that a narrative adds to the normal causal understanding of the course of events—and sometimes emotional understanding may blur causal understanding too. Velleman's stance is clear and rigorous: explanation and understanding as such are based on grasping the causal linkage of events we try to figure out. This has nothing to do with narration. A story representing a chain of events brings it "closer" to the viewer by not only blurring the real causal links, but also by transferring those links from the rational level onto the emotional level where "real" causation has no role. Emotional understanding su-

persedes causal understanding, replaces it, and in its most "dangerous" form provides the illusion of being a sufficient understanding. This is what Velleman calls a "projection error." "The error that's likely in response to narrative history—and that might be misdiagnosed as the projection of an ending onto event—is rather the error of mistaking subjective for objective understanding. The audience mistakes the resolution of its feelings about the events for a resolution of other questions about them" (2003: 20). According to Velleman, believing a causal explanation is rational while believing a narrative explanation is irrational because it is based on this "projection error." One could say that Velleman characterizes narrative as seduction rather than explanation. He shares most philosophers, scientists, and lawyers' contention that causal explanations are "objective" and "rational" while "emotional" understanding is subjective and irrational. Arguably, this is the contention that underlies modern science, politics, and legal practice. I am not here to dispute this contention. My aim is to try to move away from this rigorous opposition between causal and narrative understanding and to show that this separation is not always as clear-cut as it seems, at least as far as narrative understanding is concerned.

Gregory Currie (2006) tried to push Velleman's idea in this direction by introducing what he called "reason based" explanation in narrative understanding. Currie does not question the idea that causal connections are essential parts of any narratives, but, at the same time, agrees with Velleman that causation should not be regarded as part of the definition of a narrative. He proposes that narratives are made coherent by "reasons" that prevail in the world of a story without producing explicit causal connections. His basic formula is that even if A is not linked causally to B, the fact that B occurred creates a kind of balance in the world (say a moral balance), so B had a reason to occur. Reasons are like overarching rules in a narrative that are not productive of direct cause-effect relations, yet they explain why things happen. We can illustrate this by a well-known example. At the end of *The Postman Always Rings Twice* (1946) the heroine dies in a car accident and the hero goes to jail for murder (Figure 1). The viewer/reader interprets this narrative closure as the just punishment for their murder of the woman's husband. Although, there is no causal connection between the crime they committed and the accident, nor between the woman's death and the husband's death, we still think that the woman's death and the man going to jail are punishments for their crime— that the crime was the "reason" for their punishments. Often that is what we call "fate" or "destiny."

This brings us to a well-known idea in drama theory: Lajos Egri (1946) created the idea of "the premise," which is the basic underlying and ruling principle of every important event in a drama. Events in the drama are like examples or demonstrations, even if they have no direct causal connections

Figure 1. Chambers is sentenced for a murder he did not commit in The Postman Always Rings Twice.

between them. Concepts like "the premise" (Egri), "narrative connection" (Carroll), "emotional understanding" (Velleman), or "reason-based explanation" (Currie) have something in common. All these claims amount to saying that an important aspect of narrative coherence is based on causal connections in a very broad sense of the term—events yield an understanding based on general rules (reasons, emotional patterns, conditions that only make possible certain outcomes), rather than on a strict cause-effect relation.

Toward the end of Currie's article we detect a difference in his thinking from that of Velleman. Currie recognizes that, after all, reason-based explanations that are also causal may essentially interact with emotions. Emotions may influence our reason-based causal attributions and vice versa. "I say that our affective response to the narrative can influence the extent to which we interpret the events of the story as connected by reason-based relations; this perception, or misperception, of a connection then has further emotional effects on us, and may contribute to our sense that this discourse really is a narrative, rather than something else" (Currie 2006: 314). If emotions and other factors play a role in making sense of causal relations in a narrative, causal relations cannot exist independently of these factors. We must think of them as built into the narrative in a way that their effect is contingent on the other factors.

How Do Emotions Relate to Causal Inference?

How do these variables "distort" pure cause-effect relations? My working hypothesis is that our emotions, psychological states, and personal traits influ-

ence our perception of causal connections.[2] The reason why the causal links we construct while watching a narrative can be very different from viewer to viewer is not that we fail to "think" and only "feel" during film viewing. It is because the immediate emotional effects of a narrative make each of us, depending on our own emotional bias, perceive its causal relations different from the way we would perceive them through "cold" and thorough logical analysis. Narratives are meant to provoke emotional effects rather than cool distanced logical analysis. Furthermore, the logical progression of a narrative and the emotions it provokes influence each other. And it is just that influence that allows us to make sense of a narrative

Velleman is right: understanding a narrative does not entail merely understanding the clear and evident causal connections. He is also right in saying that we can genuinely understand a narrative even without understanding those causal connections (i.e., how a given situation has come about). I also agree with him in that this kind of understanding can be regarded as based on pattern similarity (e.g., I recognize an event pattern that I have experienced already in the past, and know how it feels). But where should we go from here? Definitely not where Velleman goes: he claims that narratives are dangerous, irrational, and manipulative powers that make people believe in them without well-founded reasons. First, recognizing a narrative pattern supposes some causal inference related to the elements of the pattern (events A and B usually lead to or cause events C and D), and "knowing how it feels" means knowing the emotional consequences of this pattern, which is another causal inference (events C and D usually cause an emotional state type T). Second, in situations of human interactions where intentions and emotions are involved causal analysis cannot be separated from understanding by "knowing how it feels," so there is no point in opposing rational causal analysis without emotional bias and understanding based on empathy in the context of narrative understanding. Two causal analyses of a narrative situation can be very different due to different emotional biases and both may still be rational. In both cases "real" or "pure" causal relations do not count as factors of understanding, only emotionally biased causal relations do.

For example, I see a child desperately crying and I deeply feel sorry for her. I take her into my arms and comfort her without knowing why she cries. Then she tells me that she was abandoned by her parents, or she lost her puppy, or was beaten up by another child. This knowledge does not make any shift in my emotional understanding of how it feels for a child to cry desperately. My emotional understanding of the "story" remains the same. But by the same token I may learn that she started the fight, she threw away her puppy, or that her parents did not abandon her—on the contrary, she ran away from her parents. Do I stop feeling sorry for her? Well, some people do and some do not. As far as I am concerned, I still take her into my arms and still comfort her, maybe

with less empathy. But some people would say, she deserved the distress because she has done wrong, and her punishment is deserved. For them, the story is different, and learning the cause of her crying considerably shifts their emotional understanding of the event. The main problem with Velleman's argument is that "knowing how it feels" may be based on fallacious causal arguments and thereby be deceptive for the audience. But there are still causal factors; and no theory, only empirical research can help us figure out how understanding is a product of this bias.

Again, I am not going to engage in the debate about the existence of emotionally non-biased causal knowledge.[3] I strongly believe that in the context of narrative understanding we never encounter it. Moreover, causal arguments are often based on beliefs and convictions, and are not necessarily the result of evidence that itself may be false. In the psychological research on causal attribution, this type of thinking is called "causal power" (Cheng 1997). People may attribute causal power to things with which they are unfamiliar and create the most irrational arguments. Narratives are made for us to use this ability to find causes wherever we can, and create even the most preposterous relations to explain the emotional state the narrative puts us into. In narrative understanding causal knowledge is always deeply biased; therefore, there is no way of making a clear distinction between feelings evoked by a situation and a rational causal explanation.

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Velleman says, for example, with regard to Oedipus's story, that for someone who believes that fate does not exist, the story only makes sense if this person knows how it feels to be undone by one's own efforts. This person assumes that whatever happened in this story are, as Velleman put it, "prior coincidences that are breathtaking in their implausibility" (2003: 21). In Velleman's account, pure coincidences in a narrative may not lead to a conclusion that makes sense for someone who does not believe in fate. This person understands this tragedy only through analogy and empathy, and not through causal reasoning. My claim is that in the context of narration there is no contradiction between causal reasoning and empathy. For one thing, how do we know that the only way a human being who does not believe in fate could make sense of this story is for her to know how it feels to be undone by her own effort? Suppose I am a person who does not believe in fate, but who thinks that the only power in life is pure coincidence and that all causal chains lead to unpredictable coincidences that cause things to go in unpredictable ways, and in extreme cases—like in the story of Oedipus—in the opposite direction from where the protagonist wants them to go. This is a causal explanation and it definitely makes sense. Or I am a person who thinks that the social order is so strong that no matter what a hero wants to achieve, it leads

him in the opposite direction from his desires. This is another causal argument that makes sense. Moreover, "knowing how it feels to be undone by our own effort" supposes the opposite—knowing how it feels not to be undone by our own efforts but by coincidence or fate.

As stated earlier, knowing the consequences of emotions may involve believing in causal links; for example, between fatal coincidences and particular emotions. In this case emotional understanding is also a sort of causal understanding. Strictly speaking, the only kind of "understanding" that is not causal and that is based on "knowing how it feels" would be when someone says, "I can see this person in distress. I know how it feels to be in distress, so I know what this person feels." In what sense is this a narrative understanding? Only inasmuch as I can explain that person's acts. But this will be a causal explanation. As long as the person in question does what I usually do when I am in distress, I can say, that by analogy, or by "knowing how it feels," I know why this person does what she does. When the person does something different from what I would have done, I can still find a causal argument although "knowing how it feels" does not help. I believe that someone can behave this way because the film says so, and I want to believe the film, so I am ready to create an explanation no matter how unlikely it is. Once a situation or a state is understood in relation to another situation, process, or power, we cannot avoid making causal links, and the kind of causal link we actually make may largely depend on our momentary or long-term emotions, beliefs, convictions, mental, or psychological states. That is what I call the emotional bias of causal inference, and I propose that this bias is intrinsic to narrative understanding. Hence, there is no such thing as "pure causal analysis" because all analysis has some emotional bias.

Causal Inference Is Partly Driven by Inside Stimuli

Creating causal links with the help of overarching rules is a mental property characterizing human thinking that makes it possible to see connections where we cannot rationally prove their existence. I now turn to psychological arguments that support the idea that making causal connections is a fundamental and to a great extent automatic human mental activity that works even if no reasonable basis is available for it. From this propensity we can conclude that causal inference is at least partly driven from inner rather than exterior stimuli.

In the twentieth century the notion of "causation" lost much of its importance in philosophy and physics, ceding its throne to "probability," but, at the same time, it simultaneously gained a lot of importance in psychology and neuroscience. Despite the increased importance of probability in scientific explanations, Hume's ([1738] 2008: 22) and Kant's (1855) position have not faded: research in psychology confirms that our understanding of the world around

us is based on causal explanations, and much of understanding how human thinking works involves understanding causal inference. Festinger's (1957) famous notion of cognitive dissonance sheds light on the fact that we cannot tolerate the causal inconsistency between our values and our actual behavior, and we are happy to change our values when they turn out to be inconsistent with what we in fact do. Providing causal explanations to anything that seems important to us is basically a psychic necessity or even an unconscious automatism even when its output is sheer nonsense (Gazzaniga 1985, 1998).

In this perspective the right question to ask is not what role causation plays in narratives, but rather what role narratives play in the interpreting functioning of the mind.

Many experiences show to what extent we are ready to distort the facts to be able to give even implausible explanations that look causal and consistent. One of the most radical developments of Festinger's ideas is Michael Gazzaniga's (1985, 1998) hypothesis about an independent brain module called "the interpreter" whose function is to constantly provide causal explanations to anything the person does unconsciously and that somehow needs explanation. Because we do virtually everything unconsciously according to Gazzaniga, the interpreter's role is to find consistency in our essentially unconscious functioning. In other words, we are constantly telling stories about why we are doing what we are doing. In this perspective the right question to ask is not what role causation plays in narratives, but rather what role narratives play in the interpreting functioning of the mind. Because causal connections cannot be experienced nor can they be metaphysically proven, we attribute causal relations both according to our experience of covariance (phenomena that regularly occur together), and to our rational knowledge or irrational beliefs about "causal power": "people do not simply treat observed covariations as equivalent to causal relations; rather, they interpret their observations of covariations as manifestations of the operation of unobservable causal powers" (Cheng 1997: 369). Narratives can be seen as touchstones for our causal beliefs, and they play with those beliefs.

If we are to look at narrative as a function of causal thinking, we must suppose that we attribute causal relations to events seen in filmic narratives according to the same principles as we do in real life—otherwise the narrative would not be a function of causal thinking. We expect viewers to behave differently while watching a movie than they do in real life in only two ways. The first difference has to do with the fact that when we make sense of a story in a film we always suppose authorial intentionality—in interpreting narrative we look for means to interpret authorial intentions. The other difference has to do with the fact that the cues triggering causal thinking in a film are emphasized by different poetic, dramaturgical tools, whereas in real life stimuli triggering causal thinking most of the time have no salience whatsoever for the senses. Causal thinking in real life most of the time is driven by inner

states, interests, and practical goals. In a film, we may suppose, it is mostly driven by cues intentionally made.

An interesting example of this can be found in Peter Greenaway's *The Draughtsman's Contract* (1982). According to Mr. Neville's orders, no living being and no sign of life are allowed at the location he is drawing. Because his attention is directed only to living beings and moving objects, he pays no attention to strange objects that are placed in the scenery by others, although their being there could raise questions. He composes them into the picture without ever asking why they are there. These objects pass as if unnoticed and irrelevant for Mr. Neville, but not for the viewer. In one scene a shirt is placed on a tree blocking his view. We can see that on the drafts of the previous day the shirt was not there. Mr. Neville first wants to remove the shirt off the tree, but finally he leaves it as it is. Here the viewer definitely should ask how this shirt got there. Mr. Neville accepts it as it is (Figure 2). Other characters also react differently to these objects.

> Mr. Seymour: "Your drawings are full of the most unexpected observations! . . . Are you sure this ladder was there?"
>
> Mr. Neville: "Undisputedly."
>
> Mr. Seymour: "And what is this, it looks like a . . ."
>
> Mr. Neville: "Whatever it is, it was there!"

Later on Mrs. Talman explains to Mr. Neville that the unusual objects dispersed in the garden form a narrative, they tell a story, and because Mr. Neville

Figure 2. Mr. Neville leaves the shirt on the tree and in his drawing in Peter Greenaway's The Draughtsman's Contract.

does not ask any questions about them, the story they tell escapes him. Unlike other characters and the viewer, these objects do not function as causal cues in a real-life situation for Mr. Neville. For the viewer they are made a causal cue by narrative or visual means in the film. Greenaway creates compositions in which the viewer's attention is directed to the unusual objects of the scene, and the viewer is likely to ask why they are there, while they are insignificant for Mr. Neville who cannot see them in a real-life situation. In this way Greenaway demonstrates that an object or even a property of the object is not necessarily a trigger for causal attribution. Such attribution depends on the attitude of those watching. Theoretically, in a film such attribution should be the result of stylistic and narrative control. But to what extent it actually is in specific cases should be tested empirically. What we need to do to this end first is to explore our everyday causal attribution processes and then find the points in cinematic narratives that are capable of activating these processes. The next question is whether or not these points trigger the same reaction in the majority of the viewers and to what these differences are due.

The first question to ask is this: Is causal inference a constant attitude of the film spectator that is always "on," or, on the contrary, is causal thinking something the viewer resorts to only at certain moments? This question leads us to a more general one: Is every mental process that is related to causation or to predicting event sequences considered a conscious causal inference? Do we in real life ask a causal question every time we are confronted with an event sequence in which the events seem causally related?

The brain researchers' answer is no. Research on causal thinking has found that direct perception of causally linked events (like a snooker ball pushing another) is one thing and thinking about the cause of something is another. There is a difference between *causal inference* and *causal perception.* Schlottman and Shanks (1992) suggest in a series of experiments that causal perception and causal inference are two different mental processes. Roser et al. (2005) have shown in experiments that the direct perception of causality and the ability to infer causality are not only different processes, but they also "depend on different hemispheres of the divided brain." Furthermore, other research shows that direct causal perception can be conceived of "as being an inherent property of the visual system akin to processes such as visual grouping, and illusory contour completion" (Fugelsang 2005:45). In other words, direct causal perception may be a "hard wired" property of our visual system functioning unconsciously, very much the same way as some other basic visual function. Some authors even say that direct causal perception in fact can be best described as a version of object perception (e.g., Csibra et al. 2000; Scholl and Tremoulet 2000). Causal perception is more like an unconscious process that needs no conscious processing while causal inference is a con-

scious process involving various high level computing activities. When we see a ball touching and pushing another ball, it is an immediate, automatic perception that cannot be seen otherwise and the interpretation of this percept cannot be changed. We cannot help seeing a causal connection in this case. Action films and slapsticks often use this perceptual level of causation. It is in the case of causal inference, that is when no direct causal relation is perceived, that we are confronted with the philosophical and psychological problems of causal thinking. Thus, when we discuss the causal construction of narratives we must also make a distinction between automatic causal perception and causal inference, and between separate narrative tools according to which level they refer. Causal cues are points in a narrative triggering causal inferences independently from a direct causal perception.

One of the most general observations that psychologists interested in causal thinking have made about causal attribution is that people do not look for the causes of everything all the time. Instead people ask causal questions only in case of unusual or irregular events (Cheng and Novick 1991; Hart and Honoré [1959] 1985; Hastie 1984; Kahneman and Miller 1986; Lehnert 1978; Nesdale 1983; Weiner 1985). When someone opens the door, enters the room, closes the door, and hangs his coat nobody is likely to ask any questions about this person's actions. It is not that we cannot ask causal questions, nor is it that we cannot answer these questions if somebody were to ask them. We just do not do that. There are many event sequences in our lives—call them routines—that we accept as belonging together without ever asking questions why they occur the way they do. Imagine how exhausting it would be to constantly ask for the causes of every little detail of our everyday life. Understanding these event sequences does not suppose any causal thinking; it supposes accepting that they go together in a certain situation. Recognizing the overall situation enables us to predict some event sequences without referring to any causal explanation. These are conditioned responses that involve knowledge by experience of what events go together in a certain situation—not knowledge about the reason why these events go together, only knowing the fact that they do. They are perceived as one unified sequence, as in the case of causal perception, and if we were to ask the question why this is so, the answer would likely be "this is how it has come to be." The important thing is that even when there is a causal explanation available, we are often not interested in knowing it.

How We Construct Causal Connections

According to the model of causal understanding of narratives I propose, construction of narratives depends on at least three types of mental activities that involve understanding event sequences or making predictions as to what the sequence is likely to be:

1. Causal perception;
2. Conditioned prediction;
3. Causal inference.

When following a narrative, viewers either directly perceive causal events, or see sequences of events that may not be causally linked but whose order they accept as "normal"; or they see event sequences that raise their curiosity as to why they follow the way they do, and, in order to understand them, find some causal explanation. Narratives are constructed so that at certain points they incite the viewers to ask causal questions, and they direct the viewer's attention and thinking toward some solutions that seem more plausible than others. In other words, causal understanding (at least in normal conditions) cannot be entirely arbitrary, but though it allows competing interpretations, there does not exist an infinite number of possible solutions. Viewers rely on the narrative construction to determine when they start thinking causally. We suppose that the viewer's causal questions and inferences are triggered by certain cues in the narrative. When viewers do not perceive those cues they just watch one thing follow another. Structural research of narratives should find out what triggers causal inference, how these triggers work, and how they are used in different genres. These causal triggers, however, are of different strength in different films or in different genres. In films or in genres where these cues are weaker, we may suppose that viewers' causal attribution is dependent rather on their own psychological properties. Ideally, on the one hand, with the help of textual analysis of a narrative's causal structure we can find out what could incite causal thinking in the audience. On the other hand, with the help of empirical research of causal understanding of narratives, we can determine causal interpretative patterns dependent on psychological factors, which could explain the differences in the viewers' causal attribution.

According to this model, type one causal thinking—*causal perception*—is universal and almost hard wired regardless of personality traits, psychological states, and cultural background. Everybody interprets the same way the causal relations in the situation of a stone thrown at a window and breaking it. Type two—conditioned prediction—is supposedly most of the time also universal, although here, cultural and psychological factors may play a role. Most people know that pushing a button next to an elevator causes the elevator to come to the specified floor. Less people know that when two cowboys slowly walk out of a saloon, face each other with their hands on their revolver, that they are going to shoot at one another. Finally, type three—causal inference—is when personal factors play an important role in constructing causal links in a narrative. This is the case when no perceivable causal link is available, yet we feel that some explanation is needed. Most typically these are the situations that require human decisions. A narrative's most important causal

connections are those related to human motivations. Understanding motivations is therefore the key for understanding a narrative. Understanding motivation in narratives most of the time means understanding emotions and different psychological states. Some films provide the viewer with explicit textual clues regarding human motivations, like when a character explicitly gives a reason for her acts. In other cases textual clues are not explicit but are ambiguous. In these cases construction of causal links depends much more on the viewer's emotional or other psychic factors. In such cases it is not possible to tell with the help of logical analysis that certain interpretations of causal connections are correct and others are not. In Terence Davies's *Distant Voices, Still Lives* (1988) there is a scene where the otherwise excessively brutal father enters into the room where his children are sleeping, looks at them, and in an emotional tone says, "God bless you kids." In a seminar I asked my students why do they think the father did this the way he did. Fifty percent said: "Because deep in his heart he loved them." The other half said: "Because he only wanted to prove to himself that he loved them." This is a clear-cut case of an ambiguous causal link, where only psychological factors will decide how the viewer constructs this link. This ambiguity is not due to some "art-cinema" kind of intended undecidedness. When I asked Terence Davies about the meaning of this scene, he said, without any ambiguity, that his intention was to show that the father entered the room to prove to himself his own love for the kids; otherwise he would have told them that he loved them when they could hear him. This is a case of the viewer's emotionally biased causal understanding, which is genuine to narrative understanding and not a distortion of pure logic.

Conclusion

Causal reasoning lies at the heart of all explanations and therefore understanding of narratives. Causal relations are empirical facts rather than logical necessities. Psychological research demonstrates that causal thinking is more fundamental than logic: humans tend to explain everything all the time causally whether or not their explanations seems reasonable. More than that, a lot of what we understand causally remains automatic or unconscious. We may suppose then that much of our causal explanations, especially in fictional narratives, are influenced by our own unconscious emotional or psychological dispositions. It is not clear to what extent these factors are able to overwrite a story's narrative structure. To understand narrative causality we can do two things. We can analyze narratives and find the causal clues, determine their distribution, determine their kinds, discover some patterns they may build up, and come to a conclusion as to how a given narrative constructs its causal links. Or, we can start at the other end by observing viewers' reactions while watching a film or after having seen the film, and look for different interpre-

tative patterns based on different causal constructions. Theories of narrative understanding are only hypotheses that should be tested in empirical research to know which theory is closer to the way viewers actually understand narratives. Such tests can be based only on solid theories of narrative understanding. Now we have plenty of theories, but we have almost no empirical research of causal understanding of narratives.

Analyzing a narrative's causal structure as to what type of causal cues it uses and what type of causal attribution procedures it triggers can be very informative regarding the interaction between narrative construction and the viewer's response. For example, narrative theories and analysis so far use the category of "strength" for causal connections in a narrative. According to the approach I propose here we can determine to what *level* and to what *type* of causal connection this descriptor refers. We can now try answering such questions as: Is causal perception a dominant feature of the viewer's attitude required in a particular film, or is it causal inference? Do different genres prefer different types of causal connections? Are there specific subject matters that prefer this or that type of causal connection?

Analyzing viewer's responses can be very informative with regard to the difference of interpretations and the unpredictability of reception. With the help of this research we can probably answer more precisely why a film is successful or why it failed, how and why age, sex, and culture make a difference in interpreting a film, or why some films prove to be more effective in therapy than others.

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Notes

[1] In literary theory very similar claims were made by Bortolussi and Dixon. (2003).

[2] This is why I believe that the causal connections we construct while watching a film are different from the ones we construct hours, days, or weeks after viewing.

[3] According to Antonio Damasio's theory of emotion there is virtually no way of escaping emotional bias in reasoning: "Ironically, of course, the engines of reason still require emotion, which means that the controlling power of reason is often modest" (1999: 58).

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