

Imagining Crawling Home: A case study in cognitive science and aesthetics

William P. Seeley

Franklin and Marshall College

Word Count (paper):

Word Count (abstract):

Author's Note: Earlier version of this paper were presented at Aesthetic Psychology, University of Durham, September 2007 and the 19<sup>th</sup> Annual Meeting of the Association for Psychological Science, Washington, D.C., May 2007. Correspondence concerning the paper should be sent to William Seeley, Department of Philosophy, Box 3003, Franklin and Marshall College, Lancaster, PA 17604-3003, [wseeley@fandm.edu](mailto:wseeley@fandm.edu)

## ENERGETIC COSTS

### **Abstract (218)**

Philosophical accounts of narrative fictions can be divided into two types. Experiential accounts argue that we come to comprehend narrative fictions by imaginatively projecting ourselves into depicted events and adopting the perspectives of their characters from a first-person point of view. Inferential accounts argue to the contrary that we understand narrative fictions inferentially, from a third-person point of view, as outside observers. Recent psychological research suggests a means to evaluate this debate. Verbal assessment and visual matching measures demonstrate that the apparent extent of landscapes is influenced by the energetic and emotional costs (e.g. task difficulty & anxiety) of actions and that these effects are limited to cases in which participants anticipate an increase in the costs of actions they intend to perform themselves. If the experiential account is sound, one should find similar effects across changes in the interpretation of the energetic/emotional costs of depicted actions in paintings. In order to test this hypothesis we asked participants to copy the spatial layout of Wyeth's Christina's World. Knowledge of biographical information about Christina Olsen alters naïve viewers' interpretation of the energetic and emotional costs of the event depicted in the painting. We predicted that introducing this information would cause participants to expand the extent of the landscape in their drawings. The results of the study support this hypothesis.

### **Imagining Crawling Home: A case study in cognitive science and aesthetics**

Visual perception is not solely a visual process. What one sees in the world is influenced not only by optical and ocular-motor information, but also by one's purposes, physiological state, and emotions. (Proffitt, 2006, p. 110).<sup>1</sup>

The general attitude towards empirical research in philosophical aesthetics has softened considerably in recent years. However, significant work is needed to clarify exactly what contribution research from fields like psychology of art, cognitive neuroscience of visual art, and cognitive science in general can make to philosophical aesthetics. I have argued elsewhere that empirical research in psychology and cognitive neuroscience can help us understand how particular artworks generate artistically salient effects (e.g. Margaret Livingstone's discussion of Mona Lisa's enigmatic smile). This type of data can, in principle, be used to evaluate whether competing theories in philosophical aesthetics are consistent with the psychological processes underlying our engagement with artworks. In what follows I present a case study to illustrate this model for the contribution of cognitive science to philosophical aesthetics.

There are a number of familiar puzzles associated with the nature of our engagement with narrative works of art. For instance, why are we frightened by the fictional events in horror movies, gripped the formulaic plots of dime store mystery novels, and moved by the plights of fictional characters. We understand that none of these events and characters are real. Therefore the character of our response to narrative

---

1. Dennis Proffitt, 2006, "Embodied Perception and the Economy of Action," *Perspectives on Psychological Science* 1:2, p. 110-122.

fictions are perplexing. The debate surrounding this family of philosophical problems often centers around the role played by imagination in our engagement with characters. There are two general theoretical approaches to this issue. Some philosophers argue that we as viewers, spectators, and readers come to comprehend a narrative picture (e.g. photographs and paintings), film, drama, or work of fiction by imaginatively projecting ourselves into the event depicted and adopting the perspectives, or simulating the key beliefs, desires, and emotional states of its characters from first-person points of view. I will call this the *experiential account*. The central claim of this account is that our experience when engaged with an artwork is in some specifiably important way *internal* to the narrative depicted. If sound, this entails that fear, suspense, and emotional commitments to characters are not, in fact, surprising. Rather they are a natural consequence of the types of psychological processes responsible for our understanding of narrative fictions.

Other philosophers observe that the spatial extent of pictures and films are radically (and noticeably) different from real life, that the temporal structure of films, dramas, and texts are radically (and noticeably) different from ordinary events, and that we fail to respond to pictures, films, dramas, and texts as we would if we were either actual characters or independent observers in the depicted event. They conclude that we come to understand the content of a narrative picture, film, drama, or work of fiction inferentially, from a third-person point of view, or as an outside observer. A common theme in these theories is that we as spectators and readers are able to infer the content of narrative artworks using tacit folk psychological theories about the relationship between behavior and the beliefs and desires of others. I will call this the *inferential account*. Its

central claim is that our experience when engaged with an artwork is essentially, although not exclusively, *external* to the narrative depicted.

It is important to note that these two views are not incompatible. In fact they may be best interpreted as complimentary. For instance, a great deal of background knowledge about the context of the event depicted and the dispositions of the characters is necessary to succeed at imaginatively projecting oneself into the scene depicted in a painting (Smith, 1997); Wollheim, 1987). Furthermore, philosophers who adhere to the inferential account do not deny that first person imaginative projection plays any role at all in our engagement with narrative artworks (Carroll, 1990, 1998; Kieran, 2003). Rather they argue that the information necessary to understand the behaviors, thoughts, and feelings of characters inferentially is, in most cases, explicitly represented in the work. In these contexts simulation is not necessary to adequately comprehend a narrative fiction. Simulation is a tool that can be, and perhaps often is, used to understand the behavior of characters when this type of information is not explicitly represented. However, they argue that these cases are the exception, not the rule, and that first-person imaginative projection does not play a significant role in our normal engagement with narrative artworks. As a result, we interpret the debate between experiential and inferential accounts to be about the relative role of first-person imaginative experience, what Wollheim called *central imaginings*, in our understanding of narrative artworks.

Recent research in perceptual psychology suggests a novel way to evaluate the debate between inferential and experiential account of narrative fictions. These studies demonstrate that what one sees (e.g., the apparent orientation and extent of a landscape) is influenced by two non-optical factors: *energetic costs* (e.g., fatigue and expected task

difficulty) and *emotional costs* (e.g., fear and anxiety). For instance, Dennis Proffitt and his colleagues have demonstrated that donning a backpack, walking on a treadmill, or throwing a heavy ball increases the apparent distance to target landmarks in the local environment. Further, these effects are limited to first-person contexts in which participants directly experience an increase in the energetic or emotional cost associated with an action they intend to perform. For instance, walking on a treadmill influences the apparent distance to a target if people anticipate walking to it. However, if participants view a target with the intention of tossing a beanbag to it after walking on a treadmill there is no measured modulation in apparent distance. Jeanine Stefanucci reports similar effects associated with the emotional costs of anticipated actions. When participants were positioned at the top of a 7° grade on a skateboard, there was a positive correlation between subjective report of fear or anxiety associated with the pending descent and the apparent orientation and extent of the slope. Finally, Stefanucci and Jessica Witt have demonstrated that the effects of energetic and emotional costs in perception generalize to interactions with virtual environments and cases in which participants simply imagine performing an anticipated action.

The results of these studies suggest that *if* the experiential account is sound *then* one should find similar effects across changes in the interpretation of energetic and emotional costs of depicted events in narrative paintings. We used two images by Andrew Wyeth to test this hypothesis: “Christina’s World” and “Winter, 1946.” These paintings appear to art historically naïve viewers as realistic depictions of mundane, emotionally neutral events.<sup>2</sup> However their central figures are real individuals who

---

<sup>2</sup> For instance, in a summer 2006 Letter to the Editor from the *Lancaster Intelligencer Journal*, the writer described the paintings in the Wyeth retrospective at The Philadelphia Museum of Art as depictions of rural

suffered from physical disabilities and difficult personal circumstances. Knowledge of this biographical information alters a naïve viewer's interpretation of the energetic costs (Christina's World) and emotional costs (Winter, 1946) of the events depicted in the paintings. We predicted as a result that the introduction of this information would modulate the apparent extent of the landscapes depicted in the paintings. Our results support this hypothesis. In what follows we discuss the potential bearing these studies have on our understanding of the nature of our engagement with narrative artworks. In §1 we lay out the structure of the debate between experiential and inferential accounts of narrative understanding. In §2 we introduce several experiments Proffitt and his colleagues have used to demonstrate the effects of energetic and emotional costs on the spatial metric of perception. In §3 we discuss the experiments we used to test the effects of energetic and emotional costs in narrative picture perception. In §4 we evaluate the significance of these studies to the debate between the experiential and inferential accounts.

We conclude this introductory section with several caveats. First, it is important to note that narrative paintings are rather different than other types of fictions in that they lack the formal devices ordinarily used to explicitly deliver contextual information to spectators and readers. Narrative paintings can therefore be thought of as a limiting case that illustrates the utility of central imaging in our engagement with fictions (Carroll, 1995, 1998; Currie, 1995, 2004; Kieran, 2003; Neill, 1996). Second, our experiments focused exclusively on narrative paintings. However, given the scope of Proffitt's results,

---

American life which symbolized the same kind of moral virtues as Norman Rockwell's *Saturday Evening Post* paintings. This corroborates a comment by Philadelphia Museum of Art curator Kathleen Foster that, "People think Wyeth's paintings are journalistic..." (D. S. Greben, 2005, "Wyeth's World," *ARTnews* 104:9, pp. 158-162).

we expect that our results should generalize to other visual narrative media (e.g. film and drama). Further, given the role Proffitt attributes to these types of perceptual effects in our cognitive economy, we would be surprised if first-person imaginative projection did not play a significant role in our engagement with texts as well.<sup>3</sup> However, the evaluation of the latter claim is beyond the scope of the current paper. Finally, the debate between experiential and inferential accounts often centers around discussions of *identification*, *empathy*, or *simulation* as mechanisms for first-person imaginative projection. The question of a mechanism is an important one. However, the purpose of setting out our model is simply to provide empirical evidence that central imagining plays a significant role in our engagement with narrative pictures. I leave deeper discussion of identification, the nature of empathy, and the simulation/theory-theory debate for another time.

---

3. See below §3, p. XX.