Consciousness and Complexity in "Waking Life"

TERESA M. DOBSON & TAMMY IFTODY
The University of British Columbia (Canada)

Richard Linklater's film, "Waking Life," is a visually and philosophically surreal journey exploring theories of consciousness. Since its release in 2001, the film has developed something of a cult following online, in part because of its unusual animation technique and in part because of its philosophical content. From our perspective as humanities educators with an interest in teaching and engagement with literary art forms across a variety of media, this film offers rich material for discussion both within and beyond formal educational settings. In this paper, we remark upon the unusual animation technique and then examine the film from a complexivist perspective with a view to providing an example of how complexity theory might inform teaching and engagement with literary art, be it textual, visual, or any combination thereof.

At the beginning of Richard Linklater's animated film, *Waking Life* (Linklater 2001), two children sit on a porch playing a game with a paper fortune teller:

> *Pick a color.*
>
> *Blue.*
>
> *B-L-U-E.*
>
> *Pick a number.*
>
> *Eight.*

1, 2, 3, 4, 5, 6, 7, 8.

Pick one more number.

Fifteen.

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15.

Pick another number.

Six.

Okay.

Dream is destiny. (Linklater 2001)

The young recipient of this fortune wanders into the yard, gazing at the night sky, his eyes oddly disengaged from his face. He begins to float into the air, taking hold of a car handle in an effort to keep grounded. *Cut*.

A man dozing on a train awakes, apparently from this odd vision. *Cut*. Elsewhere – perhaps in a waking segment of his reverie – a group of string musicians practice a staccato piece. *Cut*. The man disembarks the train, only to find himself a player in what appears to be yet another dream. He hitches a ride from an eccentric would-be mariner driving a car-cum-motorboat and philosophizing about the nature of being. When he is eventually dropped off on a random street corner, having failed to think of an address to which he'd like to go, he stoops in the road to pick up a note. "Look to your right," he reads, just in time to view the grill of the car that is about to run him over. *Cut*.

He wakes in bed, rouses himself from his dream, and departs for a lecture on existentialism. But any relief we might feel at his apparently having escaped the dangers of his disjointed and sometimes unnerving dream world turns to bemused puzzlement as we follow him from conversation to conversation in which we are exposed to a range of theories about the nature of sleep and waking states of consciousness, and throughout which it is altogether unclear as to whether the protagonist is awake, asleep, or trapped in an indeterminate state between life and death.

Waking Life (Linklater 2001) is a visually and philosophically surreal journey exploring theories of consciousness as viewed through the eyes of an unnamed protagonist who is cast, stereotypically, as the quintessential student of introductory philosophy: earnest, if undirected, and possessed of copious amounts of time in which to linger in coffeehouses and the like contemplating elusive questions of being. Since its release in 2001, the film has developed something of a cult following online. A search for the phrase "*Waking Life*" on *YouTube* at the time of writing this paper, for example, revealed hundreds of uploaded video clips having to do with Linklater's film, including segments of the film itself, re-mastered clips (that is, film clips with alternate audio or modified footage sequences), and a variety of video response genres that often include original materials: adaptations, parodies, digital art installations, Flash poetry, and so on. The more

popular of these clips have been viewed hundreds of thousands of times. Further, the range of commentary in response to these uploaded materials reveals serious and ongoing inquiry into both the subject matter and the technique of the film.

From our perspective as humanities educators with an interest in teaching and engagement with literary art forms across a variety of media, this film offers rich material for discussion both within and beyond formal educational settings. In this paper, we remark first upon the unusual animation technique, which perfectly compliments the subject matter, and then examine the film from a complexivist perspective with a view to providing an example of how complexity theory might inform teaching and engagement with literary art. Because *Waking Life* is rich in content and offers much for analysis, we limit the latter discussion primarily to a key film segment dealing with theories of free will and determinism.

Visual Effect in *Waking Life*

Waking Life garnered attention after its release primarily because of Linklater's unusual approach to its animation. The film is "rotoscoped," a process that entails drawing over live-action footage to create animation. Agarwala et al. (2004) observe that the concept of rotoscoping itself is not novel. In 1917 Max Fleischer invented a technology that allowed artists to draw over projected frames from film, an approach that enabled early animators to capture the complexity of human movement. The technique has been employed regularly since that time and has been adapted more recently for use in digital animation, in the last few years becoming a "central and critical part of creating computer-generated imagery," to the point that rotoscoping is employed in "nearly every modern film with special effects" (Agarwala et al. 2004, 584).

Linklater employs this apparently common technique to uncommon visual effect. In an interview with James Brown (2002), he reveals that he shot the film on handheld digital video cameras and gave the final picture cut to a team of animators who employed newly developed software to assist them in "painting" over the existing footage in order to produce the animation. But rather than striving for consistency and photorealism, which is the apparent goal of major animation houses such as Disney and Pixar, the animation team employed a "style that is unprecedentedly artful," using the software to assist them in creating variants on, rather than copies of, reality (Baimbridge 2001, n.p.).

In *Waking Life*, for example, there is no attempt to maintain consistency of style across characters. Instead, Linklater assigned characters to individual animators and allowed each artist to develop his or her own style (Brown 2002; Baimbridge 2001). The animation style changes, as well, from scene to scene, ranging from pop art to impressionism (Brown 2002). Further, because the artist's renderings only roughly coincide with the images actually filmed from frame to frame, the picture has an unusual feel in which nothing is static, even static objects. In one reviewer's words, the visual effect is "wacky":

automobiles throb; buildings pulse; eyes and mouths loom away from faces; pavements, ceilings and floors pitch and yaw, as if aboard a ship. Flowerbeds prickle and shift in sections; the sky shifts and wheels, and perspectives and sightlines never remain entirely in place. Something that looks disconcertingly like physical reality is perpetually swarming and re-settling and re-configuring itself: an effect which is comic, playful, but also disturbing. (Bradshaw 2002, n.p.)

For a film exploring the sometimes-tenuous relationship between consciousness and reality, freedom and determinism, this is an ideal mode of expression – a perfect marriage of form and content. The visual art is highly impressionistic at times, and yet at others it seems uncannily realistic, leaving viewers wondering if they are watching stylized live footage or particularly savvy animation, just as the unnamed protagonist ponders whether he is in a waking or dream state.

Linklater observes that he did not wish to marry his unusual animation technique with a conventional narrative; instead, the film represents an approximation of one of his own dreams in which he wandered through an alternate reality conversing with characters in his subconscious (Brown 2002). While there is for the most part a consistent perspective (the Dreamer), the scenes are otherwise diverse, ranging from encounters with philosophers and mystics to glimpses of psychopathic ire and political ranting. And at times even our tenuous connection with the Dreamer is challenged because the style in which he is rendered shifts dramatically throughout the film.

A Complexivist Perspective on *Waking Life*

In terms of both its artistry and content, *Waking Life* seems ideally suited for examination from a complexivist perspective. Complexity thinking is described at length in Davis and Sumara (2006, ff. 18), and is summarized therein as "an acknowledgment of one's complicity – not just complicity with/in one's research interests, but with/in the grander systems that contribute to the shape of and that are shaped by those research interests" (25). Accordingly, complexivists eschew the notion of the so-called universal truth, instead viewing various representations as "part of a distributed network of meaning" (34), and recognizing that any attempt to theorize those representations is to participate in the emergence of reality. Inquiry undertaken from a complexivist perspective, like the Dreamer's journey in *Waking Life*, is not therefore characterized by a linear search for reductionist truths; rather, it reflects the understanding that in a complex ever-evolving environment characterized by "distributed representation,"

the best that a knowing agent can do is to take a pragmatic stance toward the representations made. How useful are they? What do they do? What do they foreground and what do they defer? (Davis and Sumara 2006, 34)

Finally, complexity thinking posits that humans are not logical creatures, per se; rather, they are "association-making creatures . . . capable of logic" who must "look at the constantly shifting web of associations to make sense of what meaning is" (35). In the next section, we bring this situated, pragmatic orientation to our exploration of the

concept of free will as it is represented in *Waking Life*, specifically considering the way in which it is conditioned by the interweaving of content and form.

As intimated in the opening scene discussed earlier, in which the children's game reveals the fortune "dream is destiny," a central issue in *Waking Life* is the relationship between destiny and free will, a problem that is of particular interest to complexivists. In simple terms, free will is attributed to the human ability to consciously control behavior. It is "the capability, whether we use it or not, to decide freely how we are going to act" (Ingram 2005, 128). If we accept this notion – that free will is equivalent to conscious choice – then it follows that dreaming, an activity of the subconscious, is not an act of free will.

This is one of the problems with which Linklater's protagonist grapples throughout the film. He seemingly wakes from his dreams only to realize that he is trapped in yet another dream world. Eventually, perturbed by his predicament, he seeks ways of controlling his dreams, presumably with a view to departing them. He listens intently when one of his interlopers introduces the notion of "lucid dreaming," which is summarized by LaBerge (1992) thus:

> "Lucid" dreamers (the term derives from van Eeden, 1913) report being able to freely remember the circumstances of waking life, to think clearly, and to act deliberately upon reflection, all while experiencing a dream world that seems vividly real (Green, 1968; LaBerge, 1985; Gackenbach & LaBerge, 1988). This is all in contrast to the usual past characterization of dreams as typically lacking any reflective awareness or true volition (Rechtschaffen, 1978). (LaBerge 1992, 290)

And yet, from a determinist's perspective, the question of whether one might be able to act freely in a dream state is immaterial, for freedom to choose, regardless of one's state of consciousness, is always an illusion.

Determinism, of course, has an important place in discussions of consciousness and complexity. Ingram (2005), for example, paraphrases the Laplacean notion of determinism, which posits that the present state of the universe is at once the "effect of its past and the cause of its future" (Laplace 1951, 4). Writes French philosopher and mathematician Pierre-Simon Laplace,

> An intellect which at a certain moment would know all forces that set nature in motion, and all positions of all items of which nature is composed, if this intellect were also vast enough to submit these data to analysis, it would embrace in a single formula the movements of the greatest bodies of the universe and those of the tiniest atom; for such an intellect nothing would be uncertain and the future just like the past would be present before its eyes. (4)

Davis and Sumara (2006) observe that this oft-cited passage reflects an early nineteenth-century faith in the "analytic method" of reducing "claims to truth to their root causes and assumptions in order to reassemble them into complete and unshakeable explanatory systems" (Davis and Sumara 2006, 9). According to Laplace's view, everything in the universe has a physical cause and, as Davis (2004) puts it, "everything that is going to happen is absolutely determined by what has already happened" (32).

Along these lines, in 1994 molecular biologist and neuroscientist Francis Crick announced what has since become known as the "astonishing hypothesis": "You, your joys and sorrows, your memories and ambitions, your sense of personal identity and free will, are in fact no more than the behavior of a vast assembly of nerve cells and their associated molecules" (Crick 1994, 3). His pronouncement signals the angst that has emerged around discussions of human consciousness and free will in the "age of the brain" (Frattaroli 2001), and is echoed by other well-known philosophers of mind and consciousness. John Searle, for example, posits the following:

> everything in our conscious life, from feeling pains, tickles, and itches to – pick your favorite – feeling the angst of postindustrial man under late capitalism or experiencing the ecstasy of skiing in deep powder – is caused by brain processes. (Searle 1995, 60)

Pronouncements like these reflect a materialist understanding of consciousness and a deterministic understanding of the universe. In short, free will is an illusion created by the mind. But if free will is merely an elaborate illusion, then why do we feel so strongly about it? As Donald (2001) observes,

> Our implicit value system assumes a rather elevated level of awareness and self-control, and our legal vocabulary is filled with concepts that reflect this assumption: "murder with intent to kill," "free elections," "intellectual property," "informed consent," and so on. Consciousness is our central tenet, our most precious, hard-won possession. (14)

Waking Life takes up the dilemma of free will throughout by troubling our perception of the difference between states of consciousness. In a documentary-style segment of the film, the topic is addressed directly when a philosopher provides an overview of perspectives on free will from before Aristotle to more current theories emerging from the field of physics. Animated with expressionistic heavy delineation and seated in a physical space that throbs and shifts throughout, the philosopher in the clip is David Sosa, Professor and Head of the Department of Philosophy at the University of Texas at Austin. The casting ploy – the expert plays himself – is typical of the genre-blurring nature of the film, which rests somewhere between documentary and dream memoir, and has been categorized variously as animation, drama, fantasy, and mystery (e.g., IMDB 2008). In this scene the animation is particularly playful: when Sosa notes that human beings are physical systems made up mostly of water, for example, his frame fills with water as he speaks; when he remarks on the physical, chemical, and electrical laws that govern a hand gesture, the anatomy of his brain and forearm is suddenly delineated; when he outlines perspectives from the field of quantum mechanics, quantum particles swerve (presumably randomly) about his head, all the while engaged in absurd antics caricaturing their unpredictable behaviour.

In this segment of *Waking Life*, Sosa observes that whether we believe a divine essence guides our actions or that there are "basic physical laws governing" our actions, "there's not a lot of room left for freedom" (Linklater 2001). Faced with this bleak outlook, he concedes that some might be inclined to ignore the question altogether; however, it is difficult to set it aside because understandings of identity are typically tied to the notion that individuals are who they are as a result of the free choices they make,

a point that echoes the perspective of Donald (2001) cited above. Although theories from the field of quantum mechanics offer a different perspective – that our actions are random rather than determined – the alternative offers Sosa little comfort. As he observes (his head aptly turning into a gear as he speaks), "I'd rather be a gear, in a big deterministic physical machine, than just some random swerving" (Linklater 2001). His perspective in this regard calls to mind that of philosopher Daniel Dennett (2003), often categorized as belonging to the school of "Hard Determinism," who argues that we need to give up the fear that a deterministic world somehow limits our possibilities: "To say that if determinism is true, our nature is fixed is to say something false. Our natures aren't fixed because we have evolved to be entities designed to change their natures in response to interactions with the rest of the world" (93). According to this line of thought, we are not slaves to genetic determinism, but rather, products of an inherent complicity between our biological structure and an evolving, increasingly complex, cultural environment.

One way to explain this bio-cultural symbiosis that is not discussed by Sosa in *Waking Life* is to evoke the complexivist notion of "structured determinism." Drawing on the work of Maturana and Varela (1987), Capra (2002) describes all complex learning systems, including humans, as being both "determined and free." As Maturana and Varela (1987) explain, we cannot "direct" or control a complex system, we can only disturb it. Ultimately, it is the complex system that maintains the freedom to choose the "triggers" or perturbations to which it will respond. At the same time, the possibilities for response are limited by the available structure (or embodied history) of the system. That is, a complex system is determined, but not by outside forces; rather, it is determined by its own record of previous interactions and is free to choose how to employ that history in response to challenges from the environment (Capra 2002, 36).

Along these lines, Stewart and Cohen (1997) explain free will as the experience of genuine choice within a deterministic system. Put simply, they argue that free will is an example of a "figment of reality," where *reality* refers to physical features of the outside world and *figment* refers to the mental process of representing those features. This notion of figment involves the "qualia" of our perceptions, those vivid sensations we attribute to objects in the physical world. For instance, the "redness" of a rose has no physical substrate that can be measured scientifically. It is, instead, a vivid impression the mind creates – what red feels like rather what red "really" is.

This leads Stewart and Cohen (1997) to suggest that we experience a vivid feeling of free will because that feeling is the qualia that decorates the brain processes involved in decision-making. From an evolutionary standpoint, qualia presumably emerged as an adaptation that allowed minds subjectively to "decorate their important sensory perceptions" in order to respond to their environment more appropriately (205). But these "decorations" are not purely the result of brain processes; rather, they are the evolutionary products of an ongoing complicit relationship between mind and culture. As Stewart and Cohen observe, "Consciousness and free will are not 'just' illusions, they are rather *figments rendered real* by the evolutionary complicity of mind and culture" (Stewart and Cohen 1997, 241). Building on this notion, they posit the following:

> Our minds, our societies, our cultures, and our global multiculture, are all evolving within a reality that we mould in images of our own creation. We are a figment of reality – but reality is increasingly a figment of us. (Stewart and Cohen 1997, 299)

And ultimately, in a quintessentially complexivist interrelation, "Consciousness and qualia are complicit, and it is qualia that give an animal an edge in a competitive world; so the illusion of having a conscious mind is a figment of reality" (239). From a complexivist perspective, then, it is not a matter of choosing between opposites (in this case, determinism or free will); it is a matter of recognizing the intricate interrelations of possibilities, and this is a point worth bearing in mind in the contemplation of all visual and literary art.

Literary Engagement and Complexity

The contentious philosophies of free will iterated in the film encourage us to ask the following complexivist questions: What does it mean to say that minds are complicit with culture? If culture is becoming increasingly complex and ambiguous, as some would contend (e.g., Crick 1994; Searle 1995), how might that change the way we experience our minds-in-culture, our evolving identities, and our possible futures? These may seem esoteric questions, but as Sosa reminds us in *Waking Life*,

> We can't just ignore the problem: we have to find room in our contemporary worldview for persons, with all that that entails – not just bodies, but persons. And that means trying to solve the problem of freedom, finding room for choice and responsibility, and trying to understand individuality. (Linklater 2001)

Ultimately, as embodied and encultured beings, we are both determined and free, and a complexivist notion of free will attempts to reconcile these once dichotomous views.

Waking Life, with its narrative and media complexities, invites us to initiate a sophisticated interpretive process by refusing to privilege one theory – or even one medium, genre, or artistic style – over another. This paper constitutes an initial response to that invitation, and serves, we hope, as an example of how complexity theory might figure in such interpretation. In terms of the educational import of this exercise, we cannot emphasize enough how necessary it is to move beyond approaches to humanities education that envision instances of art, be they literary, visual, or any combination thereof, as autotelic artifacts awaiting excavation and explication. This is by no means a new notion. Sumara (2002), for example, has argued similarly in writing about literary interpretation. In speaking of the importance of encouraging a form of deep interpretive practice entailing multiple, careful engagements with a particular text, he writes,

> . . . one must abandon theories of learning that insist on excavating Truth, or representing commonsense. This means creating conditions for people to learn to be surprised by what might happen if they dedicated themselves to literary practices that require a sustained engagement with someone else's structure of thinking. (Sumara 2002, 160)

As we value interpretive inquiry in education, we must embrace disturbance, disorientation, incoherence, and ambiguity, accepting that all of these are necessary features of complex learning. The open-ended and multilayered nature of *Waking Life* epitomizes this perspective, and makes it an excellent choice for humanities educators wishing to take up complex interpretive work with their students.

References

Agarwala, A., A. Hertzmann, D.H. Salesin, and S.M Seitz. 2004. Keyframe-based tracking for rotoscoping and animation. *ACM Transactions on Graphics* 23(3): 484-591.

Baimbridge, R. 2001. Unreal world. *Wired Magazine* 9.2. <http://www.wired.com/wired/archive/9.02/wakinglife_pr.html> (accessed June 29, 2008).

Bradshaw, P. 2002. Waking life. *The Guardian Weekly*, April 19.

Brown, J. 2002. A dream within a dream. *Metro Magazine*, 133: 154-157.

Capra, F. 2002. *The hidden connections: Integrating the biological, cognitive, and social dimensions of life into a science of sustainability*. New York: Doubleday.

Crick, F. 1994. *The astonishing hypothesis: The scientific search for the soul*. New York: Simon & Schuster.

Davis, B. 2004. *Inventions of teaching: A genealogy*. Mahwah, NJ: Lawrence Erlbaum Associates.

Davis, B., and D. Sumara. 2006. *Complexity and education: Inquiries into learning, pedagogy and research*. Mahwah, NJ: Lawrence Erlbaum Associates.

Dennett, D. C. 2003. *Freedom evolves*. New York: Viking Press.

Donald, M. 2001. *A mind so rare*. New York: W.W. Norton & Company.

Frattaroli, E. 2001. *Healing the soul in the age of the brain: Why medication isn't enough*. New York: Penguin.

Gackenbach, J., and S. LaBerge. 1988. *Conscious mind, sleeping brain*. New York: Plenum Press.

Green, C. 1968. *Lucid dreams*. London: Hamish Hamilton.

IMDB (Internet Movie Database). 2008. Filmography by genre for David Sosa [web page]. <http://uk.imdb.com/name/nm1102267/filmogenre> (accessed June 29, 2008).

Ingram, J. 2005. *Theatre of the mind: Raising the curtain on consciousness*. Toronto: HarperCollins Publishers Ltd.

LaBerge, S. 1985. *Lucid dreaming*. Los Angeles: J. P. Tarcher.

___. 1992. Physiological studies of lucid dreaming. In *The Neuropsychology of Sleep and Dreaming*, ed. J.S. Antrobus and M. Bertini. Hillsdale, NJ: Lawrence Erlbaum Associates.

Laplace, P.S. 1951. *A philosophical essay on probabilities*, trans. F.W. Truscott and F.L. Emory. New York: Dover. (Orig. pub. 1814.)

Linklater, R. 2001. *Waking Life*. 20th Century Fox.

Maturana, H., and F. Varela. 1987. *The tree of knowledge*. Boston, MA: Shambhala.

Rechtschaffen, A. 1978. The single-mindedness and isolation of dreams. *Sleep*, 1: 97-109.

Searle, J. 1995. The mystery of consciousness. *New York Review of Books*, November 2.

Stewart, I., and Cohen, J. 1997. *Figments of reality: The evolution of the curious mind*. Cambridge: Cambridge University Press.

Sumara, D. 2002. *Why reading literature in school still matters: Imagination, interpretation, insight*. Mahwah, NJ: Lawrence Erlbaum.

van Eeden, F. 1913. A study of dreams. *Proceedings of the Society for Psychical Research*, 26: 431-461.

Acknowledgments

About the Authors

Teresa M. Dobson is Associate Professor of Language and Literacy Education at the University of British Columbia, Vancouver, Canada. Her teaching and research is in digital literacy, digital humanities, and literary education. Her contact information is available on her website: http://www.lerc.educ.ubc.ca/fac/dobson/

Tammy Iftody is a doctoral candidate in the Department of Curriculum and Pedagogy at the University of British Columbia. Her research interests are in online literacies, poststructuralist theories of language, and youth culture.