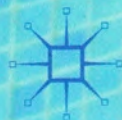


ANIMATION,
EMBODIMENT,
AND
DIGITAL
MEDIA

Human Experience of
Technological Liveliness

KENNY K. N. CHOW





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8

Creative Expression

After examining animated phenomena that are pervasive in such domains as user interfaces and digital entertainment, this chapter looks at the phenomenon of liveliness in the realm of art, which has long been a platform for humans to express, to interrogate, and to experiment. Contrasting with the previous types of digital artifacts in terms of creators' intentions or consumers' motivations, fine art practice still shares some features with them in animated phenomenal terms. Many works of art, such as mobile sculptures by Alexander Calder, mechanical automata by Jacques de Vaucanson, and others, revolve around the illusion of life, not to mention numerous arthouse animated movies. For an expanded illusion of life, works of digital art are particularly illustrative. By 'digital art' I mean the field of work whose discourse processes rely on the use of digital technology. This kind of work usually incorporates computer programs to produce variable and dynamic instances that show autonomous, reactive, transformative, and contingent behaviors. Hence, John Conway's *Game of Life* (1970) as mentioned in Chapter 3 belongs to the category by definition. The tiny but distinctive program, as the name tells, simulates the mechanics of evolution on the cellular level and projects an image of life on a two-dimensional plane. The pixels in the grid turn on and off continuously and responsively in a seemingly autonomous fashion, resulting in a diverging pattern similar to the evolution of cells. The analogy discourse on the respective rules of game and life could not be manifested without the incorporation of computational technology. On the other hand, interactive installations, including the Camille Utterback and Romy Achituv's previously mentioned *Text Rain* (1999), Wolfgang Muench's *Bubbles* (2000), Philip Worthington's *Shadow Monsters* (2004), Alvaro Cassinelli's *The Khronos Projector* (2005), and many Scott Sona Snibbe's works, are definitely

major examples of digital art. These works usually make use of real-time computer graphics, full-body motion detection and image processing technologies to create human-sized, immersive experience. The topics in discourse are undoubtedly diverse, but they are all embodied with the support of digital technology. Sometimes, even a website, a mobile application, or a video game can be intended or regarded as a piece of art. Examples include Han Hoogerbrugge's series of interactive Web comics *Modern Living / Neurotica series* (1998–2001) and Erik Loyer's interactive storytelling app *Ruben & Lullaby* (2009), both mentioned in Chapter 5. Another equally atypical work is Jason Rohrer's *Passage* (2007), which is presented in the form of a classical and pixelated platform game, but aims to deliver a poetic, poignant message about life.

Among the numerous works of digital art that have emerged in recent decades, the corpus to be analyzed in this chapter highlights only those featuring animated phenomena and exemplifying the four principles of technological liveliness in terms of the four variables. They include the interactive installation *Text Rain*, the interactive Web comics *Modern Living / Neurotica series*, and the expressive art-game *Passage*. Although these different works run on very divergent computer-based platforms, animated phenomena are indispensable to their creative discourse processes. This chapter looks into each of these phenomena closely.

Camille Utterback and Romy Achituv's *Text Rain*

Interactive installation is one of the major formats emerging in digital art. It usually involves the use of various sensors to detect users' full-body motion and real-time rendering engines to generate dynamically composed, human-sized images. The coupling of motion input with sensory feedback not only makes the installed or projected images highly responsive but also lets the audience participate in making the work's meaning. The responsive and participatory nature of interactive installation has caught the attention of many artists. Key precursors such as Myron Krueger have inspired countless successors: Wolfgang Muench and Scott Snibbe among others. Ever since Krueger's early work *VIDEOPLACE* was shown in 1969, various interactive installations have been included in canonical international art festivals such as Ars Electronica and SIGGRAPH Art Gallery. Quite a few of them were acquired for the permanent collections of prestigious art museums and galleries. Among the array of highly regarded salient works in the Hall

of Fame, *Text Rain* is chosen to be included in the corpus here. It has been widely discussed and closely examined by digital art theorists and critics, such as Jay David Bolter and Diane Gromala in their seminal work, *Windows and Mirrors: Interaction Design, Digital Art, and the Myth of Transparency* (Bolter & Gromala, 2003). I do not intend to re-celebrate its influence here with respect to art theories and practices. Instead, this section focuses on how this exceptional work manifests technological liveliness in terms of the four variables.

The work shows a human-sized projection of animated English letters falling like rain or snow. A participant standing in front of the screen sees his or her immediate mirror image projected on the screen, and the falling letters shower on his or her image (see Figure 8.2). Any body movement will cause the projected image to interact with the falling letters – catch them or let them go. A stretched arm may catch a string of letters, which may form a verse from a poem by Evan Zimroth (Utterback, 2004, p. 221). Hence, the audience is invited to actually take part in uncovering meanings made by the text rain.

Variety of liveliness

Text Rain presents participants with their own monochromatic mirror image on the projected screen. The image is in fact produced by flipping horizontally the moving images captured in real time by a live camera on the screen. When a participant raises his or her left hand, the projected image will lift his or her right hand. In other words, the installation works as if the participant is looking at himself/herself in a mirror. Hence, the participant can ‘move’ his or her body so as to move the projected image to catch, lift, and then let fall any letters. The overall moving images on the screen, including the falling letters and one’s mirror image, demonstrate both primary and secondary liveliness.

When the projected image moves in the rain, letters might bounce off and fall from the projected body as if due to gravity. An observer of the installation would spontaneously take Daniel Dennett’s physical stance to perceive this seemingly natural physical interaction. The action and reaction between, for instance, one’s hand, and raindrops are clear and direct. Meanwhile, each raindrop is actually a letter from a poem, and sometimes a participant might want to look for, catch and hold on to a word or a phrase. Such action results in abrupt movement or bizarre posture so that an observer is tempted to take the intentional stance to read which word or phrase the participant is targeting. Here, the participant’s action and the caught phrase draw the audience’s undivided attention. This is the primary liveliness in *Text Rain*.

On the other hand, participants and falling letters also contribute to the secondary liveliness of the work. Since different letters fall ceaselessly and randomly all over the screen at seemingly varying speed due to motion parallax (a visual effect that things in the front are moving faster than those in the back), they actually compete for the audience's eyeballs. An audience might be distracted by the falling letters over the whole screen, just like gazing into the rain in real life. Sometimes, participants become excited enough to dance and strike different poses in the virtual rain. They move rhythmically and gracefully. Some even bring their own little props such as umbrellas or cloths in order to generate wavelike patterns from the falling letters.¹ These moving patterns are not related to any obvious goals but just engross the audience in a transforming whole. These visuals correspond to the secondary liveliness of the work. With both the primary and secondary liveliness, the installation immerses its audience in the holistically lively virtual rain.

Pattern of engagement

Making use of real-time live video capturing and processing technologies, *Text Rain* is able to detect and respond to users' full-body motion input without an intermediary. Whilst a participant stands in front of the screen and moves his or her body, the projected image immediately mirrors those movements, together with the reaction of animated letters in real time. During this apparently direct interaction, nearly all motion qualities of motor input are continuously tracked by the system. For instance, a participant can tilt his or her hand slowly until the caught letters finally start to slip and fall. Meanwhile, looking at the projected image, he or she is always free to lift his or her hand again to stop the letters from falling off his or her hand. With continuous motion-based input and simultaneous animated feedback, participants' motor and sensory experiences are coupled all the time. The coupling engagement allows one to move the body with impulsive desire and continuously evaluate the posture. A participant will become accustomed to 'catching' or 'fiddling' with the virtual rain very soon.

The interactive environment in *Text Rain* is also able to sustain user engagement. In the moments of inactive use (say, when there is no participant, or when the participant just stands still) letters keep falling all the same. Since the words from the poem are randomly selected and let fall, the resulting raining pattern on the screen is constantly changing. If the participant misses a particular falling verse of the poem, one can wistfully wait for it to reappear somewhere some other time. The participant's engagement is temporarily inclined to perception of constant changes. Once the verse shows up again, the participant will

have a felt want to resume action to hold it and become engaged in the coupling of action and perception again. Hence, the ever-changing environment features both coupling and sustaining patterns of engagement. Users facing the *Text Rain* environment will feel that the virtual rain's autonomous and reactive behavior is compatible with their bodily action and perception, resulting in an intimate relationship.

Level of understanding

As a poetic work of art, *Text Rain* is expressive. It entails both immediate and metaphorical levels of understanding. When a participant moves and then sees his or her mirror image doing the same in the showering letters, one immediately blends the sensorimotor experience, which is anchored by the interactive animated visuals on the screen, with one's remembered sensorimotor experience in actual rain (see Figure 8.1 for

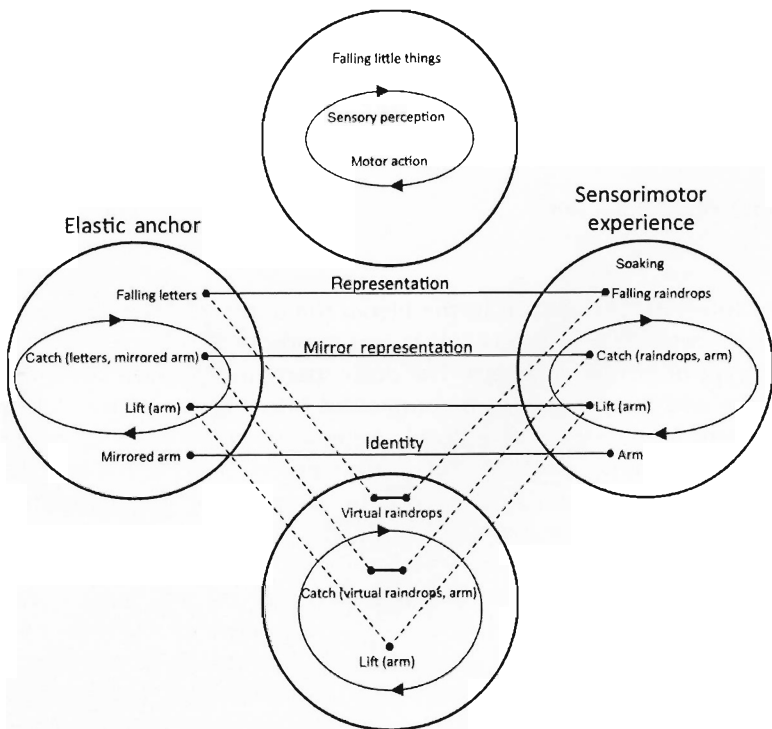


Figure 8.1 Two levels of conceptual blends taking place in *Text Rain*. The immediate blend (above) results in an embodied concept of dancing in the virtual rain, and then the metaphorical blend (below) yields a particular imaginative thought of receiving poetic messages via the body.

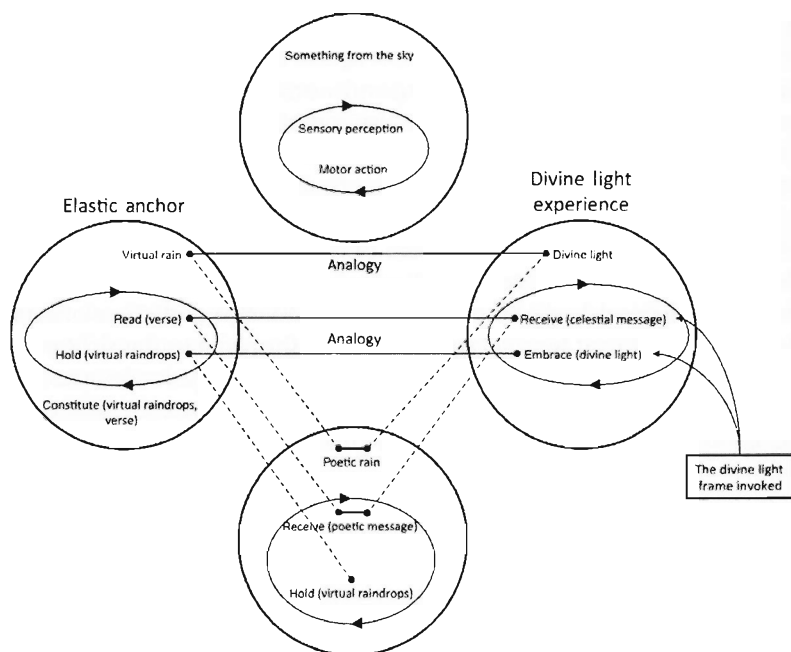


Figure 8.1 (Continued)

the integration diagram). In the blend, the outer-space representation link between falling letters and falling raindrops is compressed into a concept of virtual raindrops. The outer-space link between the mirror image and the participant is compressed into an inner-space identity relation. As a result of the blend, seeing a projected image of oneself catching the imaged rain is equivalent to oneself being in the rain. The elaboration of this immediate conceptual blend results in an imaginary space in which the participant can dance in the virtual rain without getting soaked.

The metaphorical understanding emerges as the participant notices that letters caught on his or her silhouette seem to form meaningful words or phrases. The text, in the original version of the work, is excerpted from Evan Zimroth's poem *Talk, You* (1993), which implies an imagined narrator 'conversing' with the reader in accordance with bodily actions such as 'turning around'. Whenever the participant reads the line of letters held by the body silhouette and makes sense out of it, he or she feels as if he or she is hearing someone whisper through

the body gesture. The experience may be interpreted as analogical to receiving via the body gesture a celestial message from the sky. The 'divine light' frame is invoked, including a scene involving a visible beam of light carrying an immaterial and even spiritual sign from above, and triggering metaphorical blends (see Figure 8.1). The analogical relation between the virtual rain and the divine light is compressed into a new concept of poetic rain, which carries conversational messages. The action of outstretching arms and holding virtual raindrops may be analogical to the action of embracing 'divine light' from the sky. This particular blend is not predetermined, and there are other possible elaborations as well. However, a documentary photo of the work at the Boston CyberArts Festival showing a lady receiving the falling letters with her face up (Figure 8.2) does accord with the interpretation that the work evokes a metaphorical narrative of someone receiving celestial and spiritual messages via the body and the environment. The animation of falling letters, and the viewer's interaction with them, generate an imaginative integration between the physical and the spiritual.

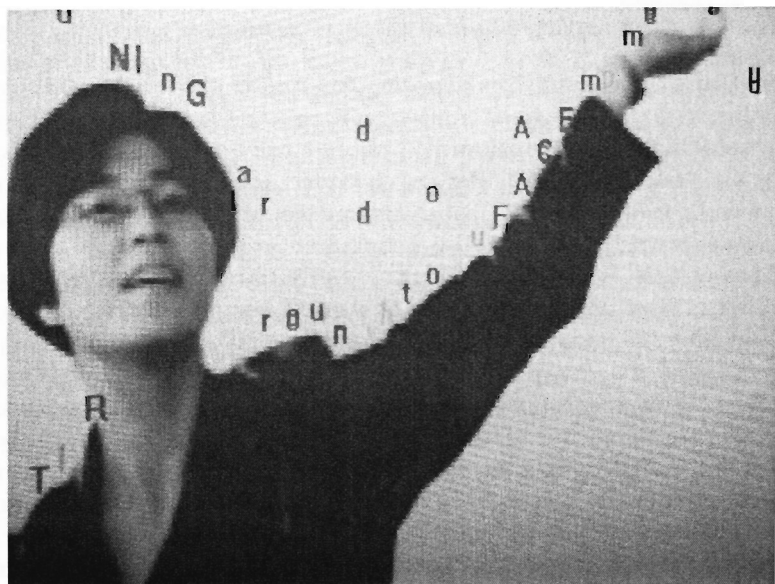


Figure 8.2 In *Text Rain* (1999), a lady receives falling letters with her face up. Image courtesy of the artists (Utterback and Achituv).

Degree of liveness

As an interactive video installation that projects the participant's real-time moving images on the screen, *Text Rain* is intended to be a platform for live improvisation between the system and the participant. As some documentary videos on one of the creators' official websites have shown (please visit <http://camilleutterback.com/projects/text-rain/>), many participants enjoyed taking part in the performance, with their own creative inputs. For example, someone brought in a real umbrella to perform 'dancing in the rain'. Several others stood hand in hand and made wave to bounce off the rain. They all actively participated in creating animated phenomena in the performance facilitated by the system. When it comes to liveness, the only stored visual components are the typographic characters of the poem. The participant image captured and projected in real time interferes with the motion of the falling letters on the fly. In other words, the installation demonstrates a very high degree of liveness, which means that the work opens up nearly endless contingencies for participants to intervene.

Han Hoogerbrugge's *Modern Living / Neurotica series*

Like many works of art, *Text Rain* is exhibited publicly in an art gallery or similar setting. In contrast, another work to be discussed here emerged on a strikingly different platform. It was originally intended to be shown on the Web. Since 1997, the Dutch comic artist Han Hoogerbrugge has used the Internet to publish interactive animated comics on his website Hoogerbrugge.com. The first work of the project, *Modern Living / Neurotica series* (1998–2001), featuring nearly 100 short animated films, addresses small observations from the artist's personal life, which also resonates with some users' lives, including workaholism, social impositions, and the like (please visit <http://ml.hoogerbrugge.com/>). Apart from a few simply looped animated sequences, most of the animated comics are interactive. The collection can be seen as a documentation of the artist's experiments with mouse-mediated interaction. They are inspirationally successful in remapping conventional mouse action like point-and-click to different intentions. For instance, in #43, 'Itch', a mouse click makes the character (a self-portrait of the artist) 'itch' wherever the mouse pointer is located. Through various couplings of motor action and animated feedback, the peculiar work mobilizes motor-sensory connection and projects an expanded illusion of life.

Variety of liveliness

Within the archive of animated comics in *Modern Living / Neurotica series*, both primary and secondary liveliness are pervasive. The former can be seen in many pieces in which the character tends to 'get away' from the mouse pointer. For example, in #61, 'Drowning', a user can move the pointer to play hide-and-seek with the character. The character just sinks into the water on mouse-over and rises elsewhere. In #54, 'Jumpy', a mouse-over action seems to drive the character to jump around. In #68, 'Obedience', keeping the pointer over the character's head can 'bring' him to his knees, and after a kowtow he immediately stands up again. All these action-and-reaction animated phenomena demonstrate clear dynamic tension between the mouse pointer and the character. Whenever it jumps away or kneels down, the character's motion directs the user's attention to a clear result. This interactive phenomenon shows primary liveliness.

On the other hand, some other pieces show secondary liveliness by displaying multiple reactive characters that distract a viewer with many animated objects all over the frame. In #60, 'New Religion', dozens of characters line up to form four rows. When the pointer moves across the characters, they stand up and then bend down continuously forming a wave like those spectators make in sporting events, also in a way similar to the magnification effect in the dock of OS X. In #85, 'Material Guy', when a user runs the pointer across the faces of the characters, they swell up and vomit home appliances – washing machines, dryers, toasters, and the like – in random order. There are often simultaneous happenings and movements in the frame, which is distracting. Moreover, the action-and-reaction relationships in these pieces are unstable. That is to say, one can reverse the pointer movement any time and the animation would more or less rewind with the character resuming its starting appearance. Hence, the overall transformation does not show any clear direction of progression but purely changes. This emergent nature echoes secondary liveliness. The archive of the animated pieces presents not only the multifaceted modernity of today but also the holistic animacy of life.

Pattern of engagement

In *Modern Living / Neurotica series*, most animated pieces are interactive. The system usually considers the position of the pointer and the timing of a click in user input. For example, in #70, 'Eternal Love', the position of the pointer determines whether the character in the foreground

or the picture in the background is in focus. In #87, 'Vaudeville', many 'dummy' versions of the character travel across the frame at various speeds. A user can point and click on any dummy head to pop it open, like in a classic carnival game. Whether a head pops open certainly hinges on where and when the user clicks. In these interactive pieces, a mouse-over or click action usually sets off a corresponding animated feedback. Strictly speaking, the input and output sections are alternating. Yet there are pieces involving more continuous input and simultaneous feedback. For instance, in #97, 'Rash', when the mouse rolls over the character's head, spines grow out of its head around the pointer. When the pointer moves away from its head, the spines recede. A user on one hand has to continue to move the pointer and on the other inevitably gazes in awe at the spines that go in and out of the face. One's motor action and sensory perception are coupled continuously throughout the game.

In case of no user action, most pieces just come to a halt. Even though a few pieces do show some changes, like #63, 'Perfect Day', in which the character keeps swinging along the background music, the audio and the visuals are just in very simple loops. The environment does not exhibit really perceivable changes until the user resumes action and moves the pointer. Hence, the enduring interaction of *Modern Living / Neurotica series* largely hinges on coupling engagement, which forces users to take action in order to experience the pieces but loses their attention during the moments of inactive use.

Level of understanding

As mentioned, many pieces in *Modern Living / Neurotica series* remap conventional mouse actions to novel meanings. These new mappings are formed with the help of immediate conceptual blending. Furthermore, some pieces even provoke metaphorical understandings. To illustrate, I focus on an example. In #83, 'Possessed', the character sits behind a task table facing the user. It seems as if he is using a computer mouse. When the user rolls the mouse pointer over the task table, the character will move his mouse to follow. This interactive animated figure acts as an elastic anchor, capturing the sensation emerging from the sensorimotor experience. It follows that the immediate blend lets the user understand how to control the character in an intuitive way, just by sliding his or her mouse to a desired spot. The mechanism is like controlling a shadow puppet with moving rods. The analogy mapping between the elastic anchor of moving the character and the sensorimotor experience of controlling a rod puppet is compressed, together with the analogy

link between the character and a rod puppet from two input spaces. The output of the blend is a concept of virtual puppet in the animated piece (see Figure 8.3). Hence, when one moves the pointer, the virtual puppet moves his hand.

What makes 'Possessed' eccentric is the strange apparitions that appear on the character's face and the curious noise he makes while the user moves the pointer around. This effect may invoke the 'Web surfing' frame in the user's mind, suggesting a metaphorical blend of the piece with an imaginative but familiar scenario – net surfers often being distracted by the many unexpected pop-ups and hyperlinks. In the blend, the mapping between the character and the user, both using a computer mouse, is compressed into an inner-space identity relation. An analogy

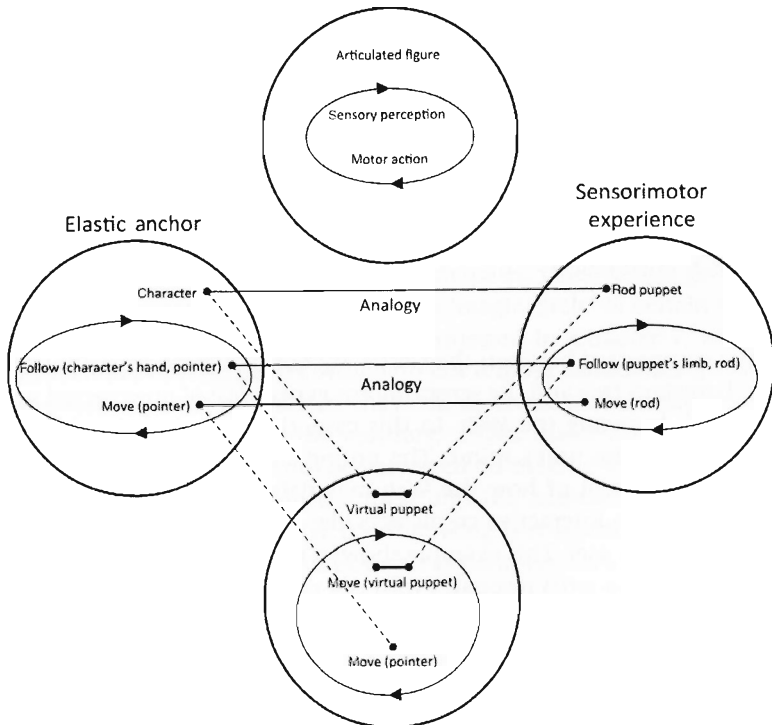


Figure 8.3 Two levels of conceptual blends taking place in *Modern Living / Neurotica* series. The immediate blend (above) results in an embodied concept of moving a virtual puppet, and then the metaphorical blend (below) yields an imagined reflection of how hyperlinks distract our minds.

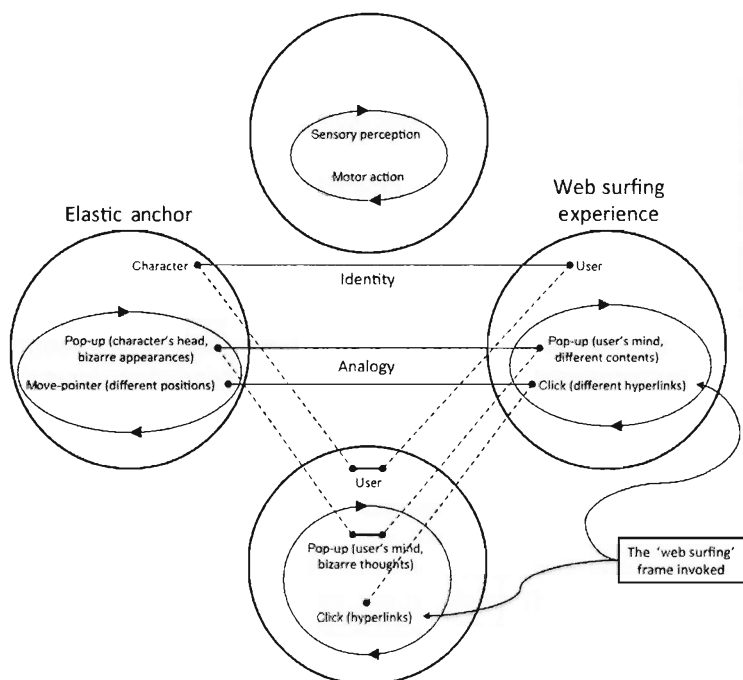


Figure 8.3 (Continued)

link is compressed between the elastic anchor of bizarre apparitions on the character's face and the sensorimotor experience of unexpected pop-ups when browsing the Web. In this case, the character's head is also analogous to the user's mind. The output of the metaphorical blend is a novel concept of how the Web materials affect our thoughts (see Figure 8.3). The interactive comic acts like a mirror reflecting the mental status of the user. This example shows a typical way in which *Modern Living / Neurotica series* resonates with our personal experiences.

Degree of liveness

Although *Modern Living / Neurotica series* is intended and regarded as a series of interactive Web comics, it also opens up possibilities of improvisation between the user and the artist, with the support of interactive multimedia technologies. An example best demonstrating this idea is #71, 'El Mariachi'. The piece features five identical characters on stage, each of which is holding a guitar in a different pose. A user can roll

the mouse to cast a spotlight on any particular character, and that character will start to play. Although all characters and guitars look alike, each of them makes a different sound. Hence, by moving the pointer the user is like playing a real-time sound synthesizer with five different instrumental tracks. The result is a live performance orchestrated by the user on the fly. In this performance, the stored components include short audio clips and a few animated drawings prepared by the artist. Meanwhile, the spotlight effect is added to the comic during runtime. Hence, this particular interactive piece from *Modern Living / Neurotica series* can be called highly live. It allows users to arrange the audio clips coupled with the animated visuals in any order for any duration, opening up almost unlimited possibilities for composing an ongoing audiovisual performance with the five simple tracks and the animated characters.

Jason Rohrer's *Passage*

Art takes many forms; so does digital art. Interactive installations and interactive Web graphics, as exemplified by *Text Rain* and *Modern Living / Neurotica series*, are two common approaches to digital art, although they occupy very different spaces in art practice. Besides, innovative art practitioners are also interested in other digital media forms such as video games. Like their physical counterparts, video games generally pit players against each other within the 'magic circle' of certain logics, rules, and conditions. Although as mentioned in Chapter 7, alternatives such as sandbox games, which do not impose explicit competition framework, do exist in practice, they still motivate players' exploration in order to entertain. On the contrary, artists make video games for self-expression. They may not be very keen on making the games addictive, but more interested in the meanings the audience makes out of them. This is the reason why the following discussion is included in this chapter. A very distinctive example is Jason Rohrer's mini computer game *Passage*.

Rohrer is an independent game designer, who has made several mini-games that have been very well received on the Internet and among both the indie game and academic game studies communities. One of his notable works is *Passage*, an expressive art-game written as a reminder of mortality for gamers to meditate on the subject (please visit <http://hcssoftware.sourceforge.net/passage/>). As Rohrer puts it in his creator's statement, '*Passage* is a game in which you die only once, at the very end, and you are powerless to stave off this inevitable loss' (Rohrer,

2007). In other words, no player can win the game. The concept of 'winning' violates the basic premise of the game, making it more a work of art than a game. He believes that computer codes could 'make us cry and feel and love' and intends to turn video games into artistic vehicles for exploring the meaning of life (Fagone, 2008). Hence, *Passage* is imbued with evocative metaphors of 'life is a journey', which is presented literally, visually as a long horizontal screen of a maze. A player starts the game with a character walking alone in a maze with many obstacles. The character's position on the screen gradually shifts from the left edge to the right within the five-minute game time. Simultaneously, the character becomes increasingly older in appearance (going bald and grey-haired, hunching its back, etc). Along the way, the player accumulates points. One may also collect treasure chests for additional points, or walk with a companion for double points. However, once the character bumps into his spouse, the couple walk hand in hand and become less agile in collecting treasures. Players have to make a trade-off. Lastly, the most poignant part is that no matter how many points one has got, the character has to die after reaching the right end in five minutes.

Variety of liveliness

Unlike most other maze games, *Passage* does not involve any computer-controlled adversaries who disturbingly challenge the player character. The only character other than the player character is his potential spouse, who contributes only to a minimum extent of primary liveliness to the game. In the beginning, the lady just stands still in the maze. Once the player character walks close enough to her, she snaps to the player character and they start walking side by side. The couple shows a magnetic type of action and reaction in the game. The dynamic tension is clear and directional. Besides, when the player character, with or without his spouse, is exploring the maze, an observer may take the intentional stance, speculating whether the character is looking for treasures nearby. In other words, the game characters always direct viewers' attention toward some objects or certain parts of the maze, giving the game its primary liveliness.

On the other hand, secondary liveliness is not prominent in *Passage*. As mentioned, there is no non-player character (NPC) wandering in the game environment, which is a main difference from other ordinary maze games. In fact, the only active element in *Passage* is the player character (the spouse only snaps and attaches to him). Players' or viewers' attention is always focused on the protagonist, without much

distraction from other objects. Although the maze itself moves steadily and unnoticeably to the left like a camera panning slowly to the right, the transformation is too subtle and also too directional to be called secondary liveliness. In this sense, the game can only draw players' focused attention whilst overlooking their peripheral attention.

Pattern of engagement

As a mini maze game like *Pac-Man* (1980), *Passage* allows its players to control the motion of the main character in only four directions, namely up, down, left, and right. In the computer version, players press arrow keys to move the character. This kind of motor input is not very closely related to motion, because a control finger pressing buttons only is not moving with the character's motion in any way. That is, qualities of finger motion like direction and force do not have significant effect on the resulting character movement, except maybe when the character changes direction. In the mobile version, however, the arrow keys are turned into four touchscreen buttons arranged in the four directions accordingly. This button arrangement allows the control finger to just 'slide' across the screen, thus to 'steer' the direction in a more 'continuous' way, and the character keeps walking and turning simultaneously. The player feels as if he or she is directing the character in motion by moving a finger around. This fairly motion-based input can also be achieved in the computer version if the touchpad (a basic input device in laptop computers nowadays) is taken into consideration. The player's motor action can be coupled with perception of animated feedback. Hence, *Passage* is able to manifest a coupling pattern of engagement.

Since there are not many active elements in *Passage*, it may seem that the game cannot sustain a player's engagement if one stops the input. This is actually not the case. If the player stops taking action and the character stands still in the maze, the character position relative to the game view would incrementally shift toward the right at regular time intervals. That means even though the character's absolute position in the maze does not change, the screen position changes due to the game camera's panning movement. In the meantime, the rendering on the right side of the screen gets clearer and clearer, whilst those on the left side become hazy. In short, the game environment still shows endless transformations without any user action. Apart from the constantly changing game environment, the character also gradually turns from a young guy to an older man no matter he moves or not. If the player resumes control, the camera continues to track the character again. Therefore, *Passage* engages its players during various moments

of use, active or inactive. With both coupling and sustaining patterns of engagement, the game environment contains temporal affordances that closely match players' scales of bodily action and perception, as well as enduring agency in which one can perform continuous appraisal with respect to his or her felt wants, easily resulting in a sense of intimacy.

Level of understanding

Although *Passage* only involves two characters and a passage, there is a wealth of metaphors provoking multiple levels of understanding. At first glance the work looks like a primitive maze game with the player character wandering and searching around. Yet the presentation of *Passage* differs from an ordinary maze game in at least two ways. First, the screen is intentionally made to be exceedingly wide such that only a horizontal slice of the maze can be seen. Second, in the early stage of the game, the far right end of the frame seems to shrink and blur. Those visions will become clearer and clearer only when the character moves forward. These nuances render an immediate conceptual blend in *Passage* more compressed than those in other maze games or platform games. In *Passage*, when a player presses an arrow key on the keyboard, the screen scrolls and reveals more walkway ahead of the character, and also in front of the player. Compared with a fixed overview of the maze in such maze games as *Pac-Man*, this incremental unfolding is more reminiscent of our sensorimotor experience of exploring an unfamiliar walkway in which the further you move, the more you see. This action-perception coupling in the game environment acts as an elastic anchor to the immediate blend. The identity link between the player and the character is compressed into an avatar relation in the blend, an embodied extension of the player in the virtual space. The representation link between pixel graphics of the maze and an unfamiliar walkway is compressed into a virtual passage. The output of the blend is a new concept of exploring an imaginative maze, as illustrated in Figure 8.4.

As mentioned, *Passage* is imbued with metaphors related to the conventional saying 'life is a journey'. First, the game presents the view in a long horizontal slice, and the character gets older and older as the game time goes by. When the character walks from left to right in the maze (and also on the screen), it becomes obvious that space is a metaphor for time. It then follows that the journey on the wide screen is a metaphor for the character's lifespan. In the end, the character approaches the right edge and then leaves only a gravestone, a conventional symbol of death. The five-minute journey represents the character's short life. Second, in the course of his journey/life, he may meet a lady. One could

approach her to establish a life-long companionship, or just leave her alone. The two options correspond to two fundamentally contrasting lifestyles. In a relationship, the character is unable to explore the narrow passageways aggressively and collect treasures along the way. Together, the couple can only go through the mainstream passage. This limitation echoes with the common frame of marriage, likely bringing out the author's intended imaginative perspective on how having a family and commitments limits possibilities. These rules and constraints form the secondary blend of the game with a story of life and death. As shown in Figure 8.4, the analogy link between the screen journey and a life with marriage, and another between a narrow pathway and a niche career or business opportunity, are compressed into inner-space relations in the new blend, together with the representation of death by gravestone.

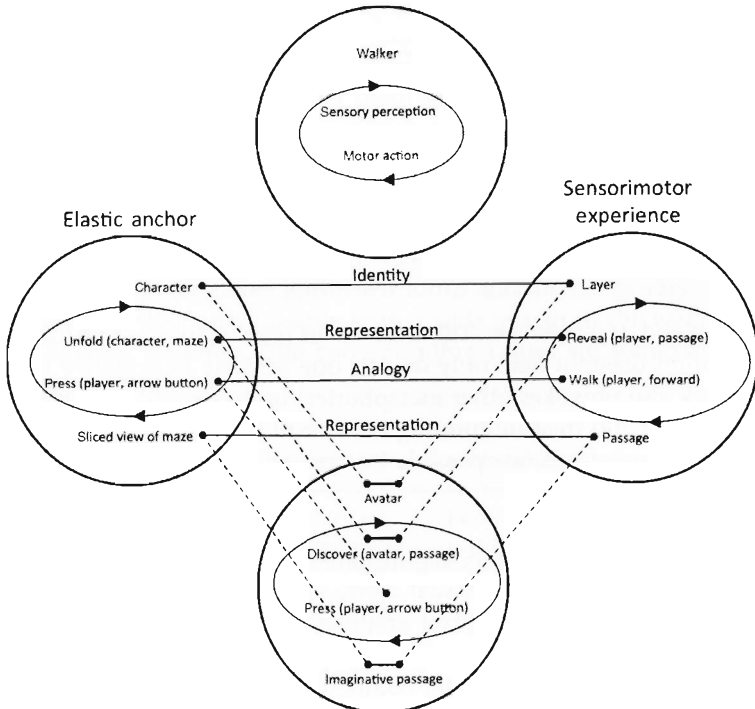


Figure 8.4 Two levels of conceptual blends taking place in *Passage*. The immediate blend (above) results in an embodied concept of walking through the virtual passage, and then the metaphorical blend (below) yields a particular message of how marriage and family commitment limits possibilities.

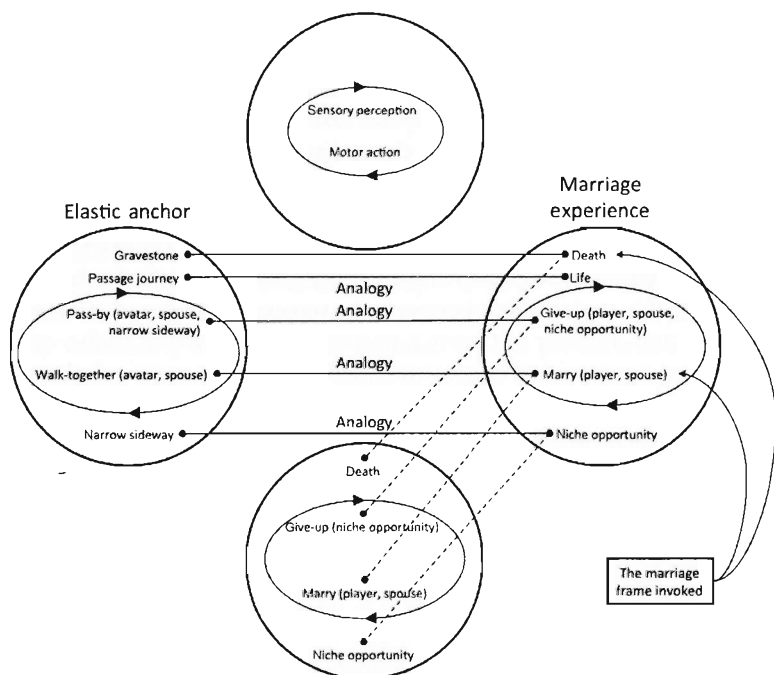


Figure 8.4 (Continued)

In the blend, the message: 'Till death do us part!' is invoked. Whilst the integration diagram here only depicts one possible imaginative blend, the work also provokes other metaphorical understandings such as the adventurous and treasure-hunting lifestyle of the celibate. The analysis here only emphasizes one possible interpretation of the game.

Degree of liveness

Compared with rudimentary action games like *Pong* or *Pac-Man*, *Passage* has relatively more stored visual assets (e.g., character graphics, maze terrains, audio, etc.). The pixel graphics of the characters and those few treasure chests were pre-rendered and stored. The structure of the maze together with its modular components were defined in advance, whilst the full rendering, especially the shrunk and hazy effect, is likely to be generated on each instantiation, because the final view depends on how a player navigates in the maze. Furthermore, the compositing of characters, items, and the maze onto the screen display is definitely executed on the fly during game play. In other words, the only stored

visual materials are still images of some modular pixel graphics. It means a moderately high degree of liveness. Although unlike ordinary games that usually have myriad divergent outcomes between winning and losing, there are still a few contingencies in the game. For example, the character may die anywhere in the maze. One may collect many treasures and score high, but be alone till death. Others may join a partner and walk straight back to the start point to wait till the game is over. Every game in *Passage* is a moderately live improvisation between the player and the system. When the character is wandering around, the player is a performer. When the player observes the steadily changing environment and the aging character, he or she becomes a member of the audience too.

Summary

Not all works of digital art rely on animated phenomena in their creative discourse, but quite a number of them entail various forms of dynamic elements in their presentations, which can be visuals, sounds, or even physical materials. This chapter introduces for discussion three distinctive works that foreground the phenomena of technological liveliness. Their initial stages of presentation are diverse, ranging from an installation in physical space, through a Web publication on the Internet, to a mini computer game. Both their forms and meanings vary greatly. Nevertheless, they unanimously span a wide terrain in the variables of technological liveliness. The corresponding values are summarized in Table 8.1 as follows.

Table 8.1 The four variable values of selected works of digital art

Artworks	Variety of liveliness	Pattern of engagement	Level of understanding	Degree of liveness
<i>Text Rain</i>	Primary (catching, holding)	Coupling (body movement	Immediate (dancing in the virtual rain)	Highly live (only stored letters)
	Secondary (raining, waving, dancing)	and mirrored image motion)	Metaphorical (the divine light frame)	
		Sustaining (continuously raining)		

Table 8.1 (Continued)

Artworks	Variety of liveliness	Pattern of engagement	Level of understanding	Degree of liveness
<i>Modern Living / Neurotica series</i>	Primary (jumping, hide-and-seek, etc.)	Alternating (click and then pop up)	Immediate (puppeteer the character)	Highly live (animated drawings and audio clips)
	Secondary (simultaneous up and down, swell up and vomit, etc.)	Coupling (roll over and spines come out)	Metaphorical (the Web surfing frame)	
<i>Passage</i>	Primary (striding)	Coupling (sliding finger over touchpad to steer) Sustaining (maze view continues to pan; avatar continues to age)	Immediate (navigable virtual maze) Metaphorical (the marriage frame)	Moderately live (animated sprites, some contingencies but convergent outcome)

Notes

1. For a look at how participants 'creatively' play with the 'letters' rain, please see the video documentation on one of the creator's website: <http://camilleutterback.com/projects/text-rain/>