Quantum Drama: Transforming Consciousness Through Narrative and Roleplay

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This article argues that through a practical understanding of some aspects of quantum theory, teachers can develop new roleplay and narrative strategies in the classroom. Describing fictional worlds through narrative and exploring virtual worlds through roleplay can transform the child's consciousness. This article considers the value of the metaphor of quantum theory in relation to drama, learning, and self-image. It discusses potential educational implications of quantum theory, such as the opportunity for greater empathy between teachers and children, in terms of their relevance for helping children meet developmental challenges.

Cet article présente le fait qu'à partir d'une compréhension pratique de certains aspects de la théorie des nombres, les enseignants peuvent développer, dans la salle de classe, de nouveaux jeux de rôles et des stratégies narratives. En explorant des mondes fictifs qui utilisent des jeux de rôles et des stratégies narratives, on peut transformer le niveau de conscience de l'enfant. La métaphore des chiffres est utilisée pour décrire le développement du niveau de conscience de l'enfant. Cet article considère la valeur de la métaphore de la théorie des nombres en relation avec la créativité artistique, l'apprentissage et l'image de soi. D'éventuelles implications éducatives de la théorie des nombres sont discutées, comme par exemple, l'occasion d'une plus grande empathie entre les enseignants et les élèves. Ceci est d'avantage pertinent lorsqu'il est question d'apporter de l'aide aux enfants dans la résolution des défis reliés à leur croissance.

Taking on a role in classroom drama can be aptly described as a leap across the gap which separates the child's self-image from the role-image. This leap requires encouragement, confidence, and energy, but successfully negotiating the leap is rewarded with a transformed self-image which incorporates new self-discoveries. In this article, I argue that the leap from self-image to role-image, and from fictional world to virtual world, are the metaphoric equivalents to the quantum leap an excited electron makes when it moves from one orbit to another around the nucleus of an atom. When the electron returns to its original orbit, it releases energy in the

form of light. I suggest that similarly, when the child casts off or comes out of role, the energy required for the role-taking is released, and often radiates visibly in the child's eyes. The role of the teacher in supporting and encouraging this leap is to provide a safe environment and positive reinforcement for the risk taken by the child. To effectively encourage role-taking, the teacher must reflect back to the child both the risk taken and the role-image observed without passing judgement.

Quantum Reality

Researchers in many different fields are joining together to present startling and thought-provoking perceptions of reality which teachers can no longer afford to ignore. The perceptions to which I am referring are the ones suggested by quantum theory. Michael Talbot, in *The Holographic Universe* (1991, p. 34), explains that *quanta* are the basic stuff from which the universe is made. The problem for physicists is that quanta behave both as particles, which can be seen, and as waves, which are invisible.

Teachers share the problem of invisibility in relation to children's learning moments, which are not always observable. It is a paradox that teachers, who want to encourage learning, cannot see the child's most profound learning moments because they know that children become self-conscious when they are aware of being observed. Creating a classroom context using narrative and drama strategies where learning opportunities can be successfully caught involves casting an invisible story net over areas of potential learning.

What are the aspects of quantum theory which cannot be visualized? It is commonplace to say that we create our own reality; Alan Wolf, author of *Star Wave*, suggests how we can learn to be more aware of our role in reality creation:

> We project experience outward from our brains and nervous systems. Since we have learned to do this since childhood for sound and sight senses, but not for touch and feelings, it is possible to learn to create a feeling in space where no "feelers" or skin even exist. (Wolf, 1986, p. 155)

Considering that the conscious selection and imaginative re-creation of possible realities within the classroom are the stock-in-trade of teaching

(Heathcote, 1984), a better understanding of the nonvisual aspect of quantum theory may help to extend the quantum metaphor. Let's begin with empirical evidence. Experiments on perception done by Karl Pribram have shown that we learn to project our reality, and even our own physical sensations, outward to the real world and inward to our physical bodies. "The paradoxical phenomenon of a phantom limb after amputation, for example, makes it unlikely that our experience of receptor stimulation 'resides' where we are apt to localize it" (Pribram, 1971, p. 168). The value of this knowledge for teachers is that if children create their own images of reality and of themselves in reality, they can also be guided to transform both their reality and their self-image.

There is another aspect of quantum theory which is invisible. According to quantum theory, reality does not consist of linear cause and effect relationships, but instead is nonlocal. Any occurrence at a given point in time and space can be thought to be intimately and immediately linked with an occurrence at any other space-time location. For example, if one child connects with another nonlocally, they are linked up "without crossing space ... and without delay" (Herbert, 1985, p. 214). This aspect of the theory may help to explain the "I-was-just-thinking-about-you-when-you-called" phenomenon. It may also explain why the drama strategy of time-travelling is often so uncannily authentic.

Whenever an electron jumps from one level of energy to another, it never passes through the intervening space between the orbits. Instead, it just seems to disappear at one energy level and reappear at the other. Physicists rarely ask what happens to the electron in between, but one physicist, Amit Goswami, suggests that the electron enters what is known as hyperspace, and returns richer for the experience:

> Often when the electron jumps levels and dives into the unknown ocean of hyperspace, it brings back something. Because the electron plunges into another world, something new happens to our world — a brilliant photon. It could be the same with us. (Goswami, 1988, p. 17)

Perhaps hyperspace corresponds to what Carl Jung (1964) has called our collective unconscious. If so, then the archetypal images which teachers have observed emerging during drama work (Heathcote, 1984; Haine, 1985; Martin-Smith, 1993), may be tapped when children take on a role, making

a collective shift from one set of space-time coordinates in the classroom to those of the fictional world of the story.

Quantum Drama

Gano Haine (1985) has defined drama as "the act of crossing into the world of story" (p. 188). Quantum theory, operating through the medium of drama, may account for what she refers to as "the draining away of time and physicality, the sense of some compelling meaning hovering over us" (p. 188). Dorothy Heathcote attests to similiar experiences: "I have evidence of some rather earth-shattering explorations which seem almost to be Jungian in their manifestation. As if myth were tapped and universals perceived during the action" (1984, p. 150).

Some years ago, I participated in a drama at a primary school with teachers enrolled in Heathcote's advanced diploma course in Newcastle. The subject of the drama, for a group of five to nine year-olds, was taken from Plato's account in the *Critias* of the fall of Atlantis. The teachers became effigies of the ten Atlantean kings who had lost their kingdoms through greed. The kings were hidden beneath a large, blue parachute, suggesting their watery grave. As the children entered, the teachers emerged slowly from underneath the parachute and stood silently in a circle, facing outwards but still "asleep." When the children had sorted out the pile of jumbled letters at our feet and discovered the word Atlantis, they made up a song using a familiar tune. As they sang softly to us, we awoke.

As the drama progressed, small groups of children questioned the teachers, and as we drew pictures of each kingdom together, we tried to figure out what went wrong in Atlantis. We then used our bodies to create several frozen tableaux, depicting the importance of maintaining the balance of power among all communities on the fragile island kingdom. That day's stories still resonate with a personal meaning, beyond time and space. T.S. Eliot has re-created poetically the paradox we may feel at such heightened moments:

Time past and time future
Allow but a little consciousness.
To be conscious is not to be in time
But only in time can the moment in the rose-garden,
The moment in the arbour when the rain beat,
The moment in the draughty church at smokefall
Be remembered; involved with past and future.
Only through time time is conquered.
(Eliot, 1952, pp. 119-120)

Storying is an active process; one which empowers children to exchange identities and remake the past (Hardy, 1977; Booth, 1994). However, drama's use of dialogue ensures that the meaning is not in the words themselves, but belongs to the interaction between the speakers (Bakhtin, 1986; Martin-Smith, 1995). Drama strategies help children to be more conscious of how their words are being received by others, often a challenging aspect of their narrative expression.

Quantum Consciousness

What is consciousness? Can exploring time and space through drama strategies, such as time travel, really help to transform consciousness? As John Dewey (1929) argued more than 50 years ago, "every case of consciousness is dramatic; drama is an enhancement of the conditions of consciousness" (p. 250). I believe that consciousness can be developed through the child's spontaneous action and reflection within the problem-solving context. I am guided by Adam Blatner (1989), who defined spontaneous action as "the product of a conscious rational mind receptive to the flow of images and impulses from the unconscious" (p. 11). John Dewey also pointed to the dynamic nature of consciousness, which he defined as "that phase of a system of meanings which at a given time is undergoing re-direction, transitive transformation" (1929, p. 251).

Understanding how we project our consciousness implies that there is no distinction between inner and outer, or between subjective and objective. Accordingly, the aim of drama research, and perhaps of all narrative inquiry should be one of intersubjective understanding, not simply dispassionate observation. As Jean Clandinin (1992) has pointed out in the *Journal of Educational Thought*, "to engage with teachers in conversations

we must confirm them as knowing people who have practical knowledge embodied in them" (p. 69).

If the quantum theorists are correct, then our personality as a limited notion of self may turn out to be only one choice from among the many which may be expressed on different occasions. When we judge the personality of others, we are perhaps unconsciously controlling and limiting the exploration of personality, an exploration which is essential for our development. In drama, we can discover with delight that we are capable of playing two characters who are completely unlike one another. Role choice in drama often involves such contradictions. Exploring these contradictions is essential for learning about ourselves. Visual artist Andy Fabo reflected that he is an artist, "one who works in the bothered tangle of contradiction" (Mays, 1989, p. C13). If we can reflect on our developing sense of self as Fabo has done, we may be developing our aesthetic awareness.

Dewey believed that the aim of education is "vitally concerned with cultivating the attitude of reflective thinking" (1933, p. 78). Drama and other narrative strategies encourage such reflective thinking, and in so doing make us more aware of ourselves and the choices available to us. Thus, I propose a more active and less Cartesian concept of consciousness, "I interact, therefore I am becoming."

Transforming Consciousness

Would a quantum theorist's account of the learning process support this concept? Fred Alan Wolf offers an interesting hypothesis concerning the quantum mechanics of learning and memory, based on the creation and destruction of quantum-physical correlations. It may be that through narrative and roleplay, children are exploring different patterns of story correlations. Perhaps each role has a different set of remembered electrons — "electrons whose correlations link together in a kind of moire pattern" (Wolf, 1986, p. 172).

Whether a character in a story is an unconscious emulation of peers or teachers from everyday life, or from a TV program, a correlation field may be created. In order to develop his or her consciousness, the child must be encouraged by teachers not to be satisfied with a single set of fields, but

must be willing to explore other patterns and create new ones. Heathcote (1984) notes that "teachers who know it all can't teach well" (p. 207); Wolf (1986) states more emphatically that "learning will only be possible in the classroom when the teacher is the pupil" (p. 171). Children may develop their consciousness in the act of discovering for themselves which quantum patterns of thinking will help to solve a given problem.

Many quantum theorists use the metaphor of the hologram for describing consciousness (Sarfatti & Toben, 1975; Wilber, 1982; Pribram, 1986). Holograms work because of the quantum wave function of light. We are accustomed to seeing these playful patterns of coloured light on credit cards, in supermarkets, and in museums. The television series *Star Trek: The Next Generation* features a "holodeck" on the starship Enterprise, with a computer capable of coordinating and projecting specific patterns of light and energy so precisely that it can re-create scenes from any time in the past. Like drama, the holodeck creates belief in a virtual world within which participants operate as if it were real, even though they may be conscious of existing simultaneously in a parallel world (Courtney, 1990, pp. 13-14). Perhaps the brain is like the computer on the holodeck of the Enterprise, capable of creating three-dimensional mental images which are nonmaterial and nonpositional in space and time — what physicists call fields. Roleplay can be be thought of as an external manifestation of these internal brain holograms. The holodeck, a complex arrangement of holograms, allows the crew members on the Enterprise to externalize and explore their mental images (or inner holograms); similarly, classroom drama allows children to externalize and explore their imaginations. Consciousness in drama or narrative results from the act of role-taking or perspective-taking — a discontinuous act similar to that of an electron making a quantum leap.

By continually altering our perspective, as we do when exploring fictional characters through narrative or virtual worlds through roleplay, we are developing our consciousness. Activity becomes conscious when our internal holograms — patterns of energy in the brain — are created and destroyed. Teachers can help children "to become comfortable with the idea of transforming their own consciousness on an ongoing basis" (Blatner, 1989, p. 17) by sharing their own learning process with their pupils.

Quantum Development

How could we go about transforming the consciousness of the developing child? There is no one way. Watching television certainly transforms consciousness, but it is a medium which does not involve a great deal of physical interactivity. If the current boom in video games continues, engaging in imaginative roleplay through interactive software may soon become the recreation of choice for young teenagers (Elmer-Dewitt, 1993). However, the danger of most popular video games is that they may not encourage play and reflection — they may encourage imitation and role addiction instead of developing consciousness; "the real power of role playing is that the people involved become aware that they *are* playing. It is the introduction of this level of self-reflection which becomes the liberating factor" (Blatner, 1989, p. 6). If reflection can be developed by encouraging personal narrative and roleplay, what about self-reflection? According to legend, Nemesis punished Narcissus' arrogance and pride by causing him to fall in love with his own reflection. When his obsession caused him to pine away with longing, he was transformed into the flower which bears his name (Ovid, pp. 79-80). The self Narcissus saw was only a dangerous illusion. Combined with spontaneous action, self-reflection can be liberating; but too much passive self-reflection can result in a lack of spontaneity. So, as Zeus said to Narcissus, "Watch yourself!" (Marshall McLuhan, cited in Courtney, 1988, p. 204).

Educational Consequences

Understanding, accepting, and applying quantum theory in the classroom may have profound long-term effects on the educational system as we know it. The opportunity for children to explore fictional worlds through roleplay is already available through such interactive technologies as CD-ROM and virtual reality (VR). To further explore the quantum metaphor, teachers must engage with children's popular or personal fictional worlds through narrative and roleplay strategies in the classroom. I do not wish to suggest that children knowingly make quantum leaps when they roleplay. In the process of role-taking in drama or perspective-taking in narrative, the child makes a leap from self-image to role-image, and from fictional world to virtual world, which are both metaphoric equivalents to the quantum leap. The notion of a single self can encourage the child to maintain a static self-concept, which can be a block to further learning.

Applying quantum theory to the learning process will result in a transformational self-concept, which is vital to the effective and ongoing transformation of consciousness. Teachers and researchers can begin *to conceive of the active child as a wave motion rather than as a particle.* This means sharing the child's journey through fictional and virtual worlds, following as best we can while he or she is transported beyond linear time and local space. Sharing a fictional or virtual journey presents a challenge to both teacher and researcher, since to share the fiction, we must first locate the child:

> The challenge for the teacher (and the researcher) is how to locate the child at any given point in time and space. What the teacher observes about the child is relative to the teacher's point of view. This awareness necessitates that the teacher share observations with the child in order to confirm them, and to discover the child's interpretation. (Martin-Smith, 1993, p. 229)

When we engage in a mutual dialogue with the child, we not only assist the child to meet developmental challenges, but also facilitate the child's developmental process by reflecting the child's changing self-image back to the child. If a child's self-image can be developed and externalized through roleplay, narrative, and other art forms, teachers may be in a unique position to do invaluable practical research by applying the metaphor of the quantum leap to the classroom.

The value of the educational implications of quantum theory will not be realized immediately, since according to quantum theory they must first be experienced. When they do occur, they will be signalled by photons of light dancing in the eyes of the children whom we have guided on imaginative journeys toward self-discovery.

In *The ABC of Relativity*, Bertrand Russell (1969, p. 9) begins by explaining that there is nothing difficult about Einstein's ideas, but that they do call for total reorganization of our imaginative lives. It is precisely this imaginative reorganization that may occur when we develop the ability to describe fictional worlds and explore virtual ones using narrative and roleplay. Quantum theory makes us aware that we can participate in the creation of our own realities, choosing and sharing our own ways of being.

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REFERENCES

Bakhtin, M.M. (1986). *Speech genres and other late essays* (V.W. McGee, Trans.). Austin, TX: University of Texas Press.

Blatner, A. (1989). Culture and creativity. *On-site Proceedings International Symposium on Drama Research Education* (pp. 1-22). Toronto: Ontario Institute for Studies in Education.

Booth, D. (1994). *Story drama: Reading, writing and roleplaying across the curriculum*. Markham, ON: Pembroke Publishers.

Clandinin, D.J. (1992). Continuing the conversation — A response to Black and Milburn. *Journal of Educational Thought*, 26(1), 68-71.

Courtney, R. (1988). Top of the bill: McLuhan and the music hall. In D.W. Booth & A. Martin-Smith (Eds.), *Re-cognizing Richard Courtney: Selected writings on drama and education* (pp. 201-206). Markham, ON: Pembroke Publishers.

Courtney, R. (1990). *Drama and intelligence: A cognitive theory*. Montreal: McGill-Queen's University Press.

Dewey, J. (1929). *Experience and nature* (2nd ed.). La Salle, IL: Open Court Publishing.

Dewey, J. (1933). *How we think: A restatement of the relation of reflective thinking to the educative process*. Boston: D.C. Heath.

Eliot, T.S. (1952). Four quartets. In *The complete poems and plays: 1909-1950*. New York: Harcourt, Brace & Company.

Elmer-Dewitt, P. (1993, September 27). The amazing video game boom. *Time*, 40-46.

Goswami, A. (1988). Creativity and the quantum theory. *Journal of Creative Behavior*, 22(1), 9-30.

Haine, G. (1985). In the labyrinth of the image: An archetypal approach to drama in education. *Theory Into Practice*, 24(3), 187-192.

Hardy, B. (1977). Towards a poetics of fiction. In M. Meek, G. Barton, & A. Warlow (Eds.), *The cool web: The pattern of children's reading* (pp. 12-23). London: The Bodley Head.

Heathcote, D. (1984). Drama and the mentally handicapped. In L. Johnson & C. O'Neill (Eds.), *Dorothy Heathcote: Collected writings on education and drama* (pp. 148-153). London: Hutchinson.

Herbert, N. (1985). *Quantum reality: Beyond the new physics*. New York: Doubleday.

Jung, C.G. (1964). *Man and his symbols*. New York: Doubleday.

Martin-Smith, A. (1993). *Drama as transformation: A conceptual change in the teaching of drama in education.* Unpublished doctoral dissertation, University of Toronto, Toronto.

Martin-Smith, A. (1995). Interplay: Integrating the arts in the classroom. In B. Warren (Ed.), *Creating a theatre in your classroom* (pp. 143-174). North York, ON: Captus University Publications.

Mays, J.B. (1989, May 6). Portrait of an artist in the age of AIDS. *The Globe and Mail*, p. C13.

Ovid. (1958). *The metamorphoses* (Book 3, H. Gregory, Trans.). New York: Viking Press.

Pribram, K.H. (1971). *Languages of the brain: Experimental paradoxes and principles in neuropsychology.* Englewood Cliffs, NJ: Prentice-Hall.

Pribram, K.H. (1986). The cognitive revolution and mind/brain issues. *American Psychologist*, 41(5), 507-520.

Russell, B. (1969). *The ABC of relativity* (3rd ed.). London: George Allen & Unwin.

Sarafatti, J. & Toben, B. (1975). *Space-time and beyond.* New York: Dutton.

Talbot, M. (1991). *The holographic universe.* New York: Harper Collins.

Wilber, K. (Ed.). (1982). *The holographic paradigm.* Boulder, CO: Shambhala.

Wolf, F.A. (1986). *Star wave: Mind, consciousness and quantum physics.* New York: MacMillan.

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