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Context Determines Content: Quantum Physics as a Framework for ‘Wholeness’ in Urban Transformation

Caleb Rosado

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Abstract

We live in a divided world dominated by a fragmentary worldview that treats the wholeness of the human family, urban environments and social reality as inherently discrete, distanced and disconnected. This fragmentary perspective, emerging from Greek dualism and fuelled by the Newtonian mechanical view of the world with its Cartesian split of either/or understanding of reality, does not lead to wholeness. Almost all discussion of urban social policies emerges from a context of fragmented thinking. Drawing from quantum physics, this paper presents a theoretical framework, a new ‘context’ for understanding urban environments and the implementing of programmes of urban transformation, including faith-based programmes. The paper examines examples of effective change agents who have made a difference in people’s lives. It culminates with an analysis of the broken window theory and how the differences in approaches—fragmentation or wholeness—generate different results. The critical point is in recognising the energy patterns and operative attractor fields from which emerge negative or positive patterns of behaviour.

Plato once observed that

Any city, however, small, is in fact divided into two, one the city of the poor, the other of the rich; these are at war with one another; and in either there are many smaller divisions, and you would be altogether beside the mark if you treated them all as a single State (Plato, 360 BCE).

While the Greek city-state that Plato was talking about contrasts politically with our present cities, the sharp social and economic division that he described is still with us today. And, as Molly O’Meara Sheehan says, “Centuries of technological innovations and social progress have done little to close the gap” (Sheehan, 2003, p. 130). I would suggest that

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a chief reason for the persistent existence of this conflictual division to this day has to do with the continued prevalence of Greek dualistic thinking, brought to its peak expression by Newtonian physics and Cartesian dualism.

The purpose of the paper is twofold. First it is to present a fresh theoretical underpinning for the work of societal institutions and community groups dedicated to the transformation of cities. This underpinning is a conscious realisation of the interconnectedness of theory and practice within a context of indivisible oneness that integrates the various aspects of such initiatives. This holistic approach with its integral view of life and its implications for shifting from a fragmented, segmented mode of thinking to an integrational framework is one that draws from quantum physics. Secondly, it is to enable students of urban transformation to understand the larger context out of which surface the social policies and urban practices by which to effect change. All content emerges from some context. Depending on the nature and breadth of the context, the content for social change that ensues will either address symptoms or get at the root of problems.

It is important also to state clearly what this paper does not address. It does not address the particulars of urban problems as much as the context out of which these emerge. It does not address the specifics of programmes, what the role of particular organisations should be in addressing urban problems, or how to achieve welfare reform. However, what this paper does address is the need for a new theoretical, contextual model—a holistic one generated by quantum mechanics—within which to understand how best to move forward particular social services and social policies that arise from this innovative, non-dualistic context. Thus, the focus of this paper is on overarching context creation and less so on the specifics of content concerns.

Context Determines Content

The basic premise of this paper is that context determines content. Similar to the unseen 'field' of gravity that structures all the visible array of constituent particles in the universe, context is the unseen 'field' of attraction that generates all the visible array of content in one's 'paradigm' (as Kuhn called it). The resulting operative framework thus determines the substance of what one sees, thinks, believes and chooses to do or not do. Gravity is, therefore, a helpful analogy to illustrate the understanding of 'context' as an all-encompassing 'field' that impacts our whole existence by drawing objects and events to ourselves. When we see an object fall, we know that it fell to the ground because of the field of gravity. While concepts related to the pervasiveness of the gravitational field are very familiar to most of us in modern society, this may not be true in all its dimensions worldwide. Let me illustrate.

A missionary once with great difficulty gained access to a remote tribe. He arrived with his truck, but the natives had never seen a motorised vehicle. Although reluctant at first, they gradually began to touch his truck. Finally, they gained enough confidence to request a ride. The missionary motioned them all get in the back of his truck and then gradually drove off. When he looked in the rearview mirror, to his surprise he saw them falling to the ground out the back of the truck. It turned out that, as the truck had started to move, they became nervous and wanted to get off. So, oblivious to the danger, they just stepped off the end of the truck just like they would step out of their huts. They had no understanding of the field of gravity with its laws of motion, inertia and velocity—within the context of a moving vehicle—and the corresponding need to 'hang on' or not step off a vehicle in motion. The fact that they did

not understand exactly how the dynamics of gravity operated in a context of motion did not null its operational force in their lives.

In an urban environment, whether or not we are aware of it, there are also invisible energy fields operating. However tirelessly one may work for urban transformation, there is always present an interplay of invisible 'fields' that is just as real as gravity. These fields are operative irrespective of whether one even recognises them or, worse yet, knows nothing about them. From these fields of context emerge the specific social problems—the observable content—that social workers, urbanologists, politicians, community developers, faith-based organisations and urban planners are trying to ameliorate, such as: teen pregnancy, drug addiction, gang violence, urban blight, welfare dependency, prostitution, abject poverty, dysfunctional families, the illegal economy, sub-standard housing, unemployment and political gridlock. Therefore, without a foundational understanding of the underlying context from which these complex problems arise, we cannot genuinely understand how they emerge, influence each other or can be successfully addressed at their source.

Context as a Field

In this paper, I am defining a 'field' as an invisible attractor pattern as described in physics—a non-local energy pattern as defined by quantum mechanics (Pagels, 1982; Greene, 2004; Munowitz, 2005) and chaos theory (Prigogine and Stengers, 1984; Gleick, 1987; Ruelle, 1991). From this 'field' then emerges an identifiable, overarching *context*—the thinking patterns, levels of consciousness and value systems that are operational in groups and individuals. From context in turn emerges the visible *content*, comprising the corresponding behaviours, observable data and specific dynamics operative in daily life. These same energy patterns self-manifest across all cultures, drawing people to express

content that corresponds to their macro context. Persons from different cultures and diverse ethnic groups that key into the same attractor fields subsequently tend to manifest similar behaviours, since non-local attractor fields are beyond race, gender, culture, social location or national boundaries.

This understanding of field is qualitatively different than the concept of 'field' in Pierre Bourdieu's theory of habitus, in which he defines the field as 'sets of relations in the world' (Bourdieu, 1977). For Bourdieu, "all human actions take place within social fields, which are arenas for the struggle of the resources" (Petri Liukkonen, n.d.). Therefore, Bourdieu's concept of 'field' is not the same kind of 'field' as the attractor patterns I am using in this paper. In some respects, his concept of 'habitus' on the surface appears more closely aligned with the term 'context' as I am defining it here. For Bourdieu, habitus is the mental construct out of which people give sense to their world, which "constrains thought and choice of action" (Ritzer, 2007, p. 176). This conceptual description of habitus, however, does not recognise the existence of underlying 'attractor' energy patterns that give rise to the manifestations of human behaviour, the essence of which I am drawing from physics. It is this concept of 'field' that connects physics and sociology. When we realise that from attractor patterns emerges 'context', a new understanding of human behaviour and the social dynamics of societal systems comes to light.

Interestingly, a highly relevant contribution of Bourdieu's conceptions to this paper is the recognition of the importance of the interplay of the subjectivity of the observer, who is also a participant with the research subjects. The findings of this paper support this 'observer as participant' element of Bourdieu's theory of habitus. What is more, Bourdieu's seminal work, *Outline of a Theory of Practice* (1977), on the connectedness of society, the transcending of the antinomies

of subjectivity/objectivity and other dichotomous concepts in sociology is a highly significant antecedent to this paper. His work as well as that of others, such as Glenn A. Goodwin and Joseph A. Scimecca (2006), challenges the dualistic positivism adhered to by many social scientists today that “facts exist independently of the observer and that the observer should be a value-neutral compiler of facts” (Goodwin and Scimecca, 2006, p. 15). Such a position of non-involvement flies in the face of the founders of sociology who fused science and morals, such that “the ‘is’ [science] and the ‘ought’ [morality] were to be merged into a moral science, a science for the betterment of humankind” (Goodwin and Scimecca, 2006, p. 14). This is what C. Wright Mills (1959) called ‘the sociological imagination’, the concept that we cannot separate our lives from the forces of society.

In a nutshell, the field from which materialise urban problems is actually an ‘energy pattern’ that brings forth the multifaceted crises, which we then focus on and regard as social problems. The truth underlying this insight is brought out by David R. Hawkins, when he declares that “there is no greater lesson that needs to be learned to reduce human suffering and bring ignorance to an end” than the truth that “all content is subject to context” (Hawkins, 2003, p. 221). This is the central point I am making in this paper. If our goal as urban change agents is to “reduce human suffering” and if our goal as professors is to “bring ignorance to an end”, then we have to instill in our students a whole new understanding, a major quantum leap of awareness. This is one that moves our thinking and action from a focus on individual human problems as so many disconnected, discrete and isolated difficulties, to one that perceives the embedded context out of which all of these problems become apparent.

To become conscious of context itself leads to a big-picture vision that is much more profound than solely focusing on the individual

details of its expression. It is transformative to understand the totality of the human experience by recognising how all the forces at play interconnect and subsequently construct observable markers of these fields. This shifts our focus from content to context, because as Hawkins emphasises

by simple observation, content is only definition or description whereas context supplies meaning, significance, and concordance with the reality of existence itself. This is important to comprehend ... in everyday social and political policies (Hawkins, 2003, p. 221).

Ultimately, in order to train effective urban change agents in programmes of community development and urban studies, we must do more than just help students to understand the magnitude of the social problems that so heavily weigh down our cities. More importantly, they need a thorough understanding of the deeper backdrop, the ‘fields’ out of which all this content of social malaise emerges. What I am suggesting here is that without a focus on the origination of context—the precise force fields at work—people (we social scientists included) will continue to fall from the back of urban social transformation ‘trucks’ and we will be at a loss to understand why our programmes and social policies do not work. This is because not just we as teachers, but also our students are often unaware of the invisible fields at work in our own lives—much less in the lives of all those living and working in complex urban environments. Unfortunately, much of what sociology/urbanology students are taught today operates out of a worldview of fragmentation—content divorced of context. This leads to a natural fixation on content in isolation, without the awareness that a limiting fragmentary context is defining the parameters of vision on how to effect change.

In essence, in this paper I am shifting our awareness to context itself. While this may at first glance seem to be unnecessary theoretical

gymnastics, it is my hope that the reader will see that from conscious reflection of this critical insight emerge truly efficacious programmes. Why is this one insight so pivotal? By grasping the fact that energy fields are continuously at work in society, we can much more easily see that a particular cascade of resulting consequences can never be different as long as the field remains the same. As long as the context remains the same, the same pattern of behaviour will keep emerging time and time again, irrespective of the culture, social milieu or location.

In order to deconstruct the overwhelming focus on the details of content, we need first to consider how we came to have this foundation of a fragmented worldview. Where did we get that feeling of separateness, that sense of 'I can be in here by myself different from everything and everyone out there'? To understand this, we must now connect the dots from physics to sociology.

From Newtonian to Quantum

In his time, Sir Isaac Newton brought forth many advances through scientific concepts of motion and gravity that are still the basics of what most people understand to be true today. Newton's Laws conceived of reality in what seemed to be a logical, objective worldview that perfectly explained actions of distinct objects that were separate from the observer. Time appeared to be sequential; objects appeared to be measurable. However, most people, even many sociologists, have no idea that the basic premise underlying Newton's observations of discrete, autonomous objects that react with each other as separate entities was essentially dismantled over 100 years ago in 1905 when a theory more all-encompassing than a round earth was discovered to be true. Albert Einstein at the age of 26 published five seminal scientific papers leading to the development of three separate branches of physics: theoretical,

quantum and nuclear.¹ He also planted the seeds for the paradigm-shifting movement from fragmentation to wholeness thinking, which physicist David Bohm, among others, later built on and made integral to his life-work. In a 1901 letter to his friend Marcel Grossmann, Einstein wrote, "It is a wonderful feeling to recognise the unity of a complex of phenomena that to direct observation appear to be quite separate things" (Clark, 1971, p. 52; Isaacson, 2007, p. 67). As a matter of scientific thinking, Walter Isaacson (2007, p. 67) writes that Einstein "had an urge—indeed, a compulsion—to unify concepts from different branches of physics".

Einstein clearly shattered the erroneous worldview of duality with his theory of relativity and the revolutionary idea that energy and matter are one and the same, depending on velocity. If time slows down, explained Einstein, you get matter; if time speeds up, you get energy, but it is essentially all one—energy. This is succinctly expressed in his famous formula $E = mc^2$, where energy [E] equals matter [m , for mass] multiplied by the speed of light [c] squared.

Einstein revealed that we do not live in a universe with discrete, physical objects separated by dead space. The Universe is one indivisible, dynamic whole in which energy and matter are so deeply entangled it is impossible to consider them as independent elements (Lipton, 2005, p. 102).

Albert Einstein, much to the surprise of many, did indeed have an important influence on urban theory. It is precisely by means of his special theory of relativity, with its central idea of oneness and wholeness (Isaacson, 2007, p. 223), that we can best understand urban transformation. This seminal idea turns Plato on his head; for the city is actually one, not two.

However, even Einstein himself could not fully accept the full ramifications of the mysterious quantum world, a window which

he opened. His famous experiment with Podolsky and Rosen, known as the EPR experiment, suggested that two particles of light instantaneously influence each other even at great distances, in an equal and opposite manner. Yet Einstein could not accept this strange or ‘spooky action at a distance’, as he regarded it, even if it was his own experiment, for the influence took place faster than the speed of light. In Einstein’s estimation, no action could be faster than light, since the implications of that fact were enormous. For, as Danish physicist Niels Bohr, a contemporary of Einstein, declared: “If quantum mechanics hasn’t profoundly shocked you, you haven’t understood it yet”. Einstein, in spite of his own evidence to the contrary, could not see beyond physicality and the Newtonian order of causality—his limiting context—to cross the threshold into non-linearity.² The block for Einstein, which is essential for us to understand as sociologists, was that he “believed that nature exists independently of the experimenter” (Cassidy, 1998/2002b), the same position taken today by positivists. Nonetheless, something more than physicality and Newtonian causality was clearly at work here, as Pearcey and Thaxton (1994, p. 204) alluded, “The two electrons seem to be bound together by some mysterious unity”. In this same vein, Einstein could not accept the implications of the Uncertainty Principle formulated by Werner Heisenberg in 1927—that the world is not independent of the observer (Cassidy, 1998/2002a). The seminal idea of this principle, that the conscious intention of the participant-observer facilitates transformation, will be discussed in greater detail later in this paper. Yet, “Einstein rebelled against the Heisenberg Principle because he preferred to think that there was a universe out there independent of human consciousness” (Hawkins, 2005).

It was up to David Bohm, who succeeded Einstein at Princeton, to advance this line of research. Einstein not only regarded Bohm

as his ‘intellectual successor’, but also proclaimed that “If anyone can do it, then it will be Bohm” (Alev, 1997), referring to the solving of the dilemmas that arose in quantum mechanics. David Bohm was able to take this insight to the next level through an understanding that a ‘new order’ was actually at work here. It was not the Newtonian order of a world made up of “distinct but interacting parts,” with the observer existing independent of the observed, but rather another order “radically different from that of Galileo and Newton—the order of undivided wholeness” (Bohm, 1980, p. 158). Bohm affirmed the Heisenberg Principle—that the intention of the observer collapses the wave function and impacts the field, the outcome. Through his theory of the implicate order, Bohm was able to show that it is not just matter and energy that are one, as Einstein had proved. Bohm suggested an implicate order “in which consciousness is no longer to be fundamentally separated from matter” (Bohm, 1980, p. 250). He called this oneness of consciousness and matter “the germ of a new notion of unbroken wholeness” (p. 250). Bohm was one of the first scientists to introduce the idea that ours is a holographic universe, where everything is connected to everything else.³ In this universe “matter and meaning are inseparable” (Alev, 1997). For Bohm, the Heisenberg Principle was instrumental in opening the door of awareness to a holistic undivided universe that went beyond the mechanism of Newton and even the relativism of Einstein. This is the non-locality of quantum wholeness that transcends the binary separateness of localistic, traditional Newtonian thinking that has unfortunately pervaded our entire society, right down to our flawed views of urban-dwellers as ‘separate’ from ‘us’, the researchers.

F. David Peat, physicist and author of David Bohm’s biography (Peat, 1996) explains the implicate order of Bohm.

The world we seem to live in—the world of classical objects, the world of Newtonian

physics—Dave referred to as the “explicate order.” He felt that what we take for reality is only one particular level or perception of order. And underneath that is what he called the “implicate order,” the enfolded order, in which things are folded together and deeply interconnected, and out of which the explicate order unfolds. The explicate is only, you could say, the froth on top of the milk and the implicate order is much deeper. It includes not only matter, but consciousness; it’s only in the explicate order that we tend to break them apart, to see them as two separate things (Alev, 1997).

Thus, this invisible, enfolded universe—the implicate order—runs parallel to the visible one—the explicate. The unfolded explicate order, the observable world of which we are physically a part, is itself merely a visible manifestation of the enfolded, invisible, implicate order of the universe. As Bohm stated, “the implicate order is a theory of the whole” (Bohm and Hiley, 1993, p. 389). Thus, there is no separate ‘out there’ or ‘in here,’ for it is all one. Bohm’s theory of the implicate order built on Einstein’s theory of relativity, where energy and matter are relative. Bohm took these ideas further, beyond matter and energy, to show “that the implicate order applies both to matter (living and non-living) and to consciousness” (Bohm, 1980, p. 249). Thus, it transcends the sub-atomic realm of quantum mechanics and emerges in everyday life. It is manifested in what he called, a holomovement, “an unbroken and undivided totality”. This is “a movement in which ‘new wholes’ are continually emerging” (Bohm, 1980, pp. 191, 198). Thus, Bohm’s ideas, like Einstein’s, also have implications for urban analysis.

Currently, Newton’s most influential ideas—his laws of motion—are being questioned with new research that continues to challenge the very foundations of classical physics and ‘traditional views of the world’ (Harris, 2005). There is now evidence that energy transfer, including that which is normally attributed

to gravitation, is the basis for all phenomena. The new theory by Efthimios Harokopos challenges Newton’s long-held view that ‘force’ is the cause of motion. Harokopos shifts the focus to power as the cause of motion, which “leads to a major revision of the foundations of Classical Mechanics” (Harokopos, 2005, p. 82).

Power allows grounding the physics that all phenomena are caused by energy transfer, including those attributed to gravitation, to the metaphysics of substantial space–time being a giant mechanism and a substance (Harokopos, 2005, p. 90).

Instead of a fragmented universe dominated by disconnected and distant entities, it is one of total unity and interrelatedness—what Einstein himself discovered. Power is not a motion, as is force, but rather a state of being. This is precisely what David R. Hawkins stated in his seminal work, *Power vs Force: The Hidden Determinants of Human Behavior*

Force always moves against something, whereas power doesn’t move against anything at all. Force is incomplete and therefore has to be fed energy constantly. Power is total and complete in itself and requires nothing from outside ... Force always creates counterforce; its effect is to polarise rather than unify ... Power on the other hand, is still. It’s like a standing field that doesn’t move. Gravity itself, for instance, doesn’t move against anything. Its power moves all objects within its field, but the gravity field itself does not move ... Power gives life and energy—force takes these away ... Force must always be justified, whereas power requires no justification. Force is associated with the partial, power with the whole (Hawkins, 1995, pp. 132, 133).

From Fragmentation to Wholeness

A fragmentary worldview is the product of thought, observed David Bohm (1994, p. 3). To illustrate, the human family is one and is not the product of separate evolutionary

processes. There are artificially established boundaries that construct separate groups—races, nations, cultures, classes, genders, neighbourhoods, cities and religions. Each part is regarded as ‘independent and self-existent’. However, this is actually an invention of thought that is then imposed on reality, which we then believe to be ‘real’ (Bohm, 1980, p. xii). This reification of constructs has unconsciously validated the sensation of separateness between people in our society, which is then brought to bear in urban policies that further the idea of fragmentation.

It divides what is indivisible—the wholeness of the human family; and unites what is not really unitable—groupings of people and sectors of cities into clusters forever separate from the whole (Bohm, 1980, p. 20).

All of this is a consequence of the outmoded Newtonian view of the world with its dualistic, ‘objective’ understanding of reality, where the observer is separate from the observed. This divided reality is actually an illusion, constructed by the mind, to frame the narrow context of our reductionist thinking and selective way of seeing.

It is important to note here that this fragmentary worldview is more of a Western concept than a global one. Asian and African societies, for example, whose cultures are more collectivistic, take a more holistic approach to explain reality. In Native American cultures, the interconnectedness of all is a given. Thus, it is no coincidence that a number of physicists have found in holistic Eastern philosophies a connection with their discoveries. Although not all physicists have realised this connection, or perhaps have not publicly acknowledged it, a number have. What some scientists have found is the ‘wholeness’ connection between their work and other philosophies, such as evidenced by Bohm in his conversations with Krishnamurti; Erwin Schrödinger in his reading of the *Upanishads*; Niels Bohr in his use of the *yin–yang* symbol

as his coat of arms; and Fritjof Capra in his *Tao of Physics* (1991), *The Web of Life* (1996) and *The Hidden Connections* (2004).

How has a Newtonian worldview shaped our ideas on urban transformation? This is a question that David Bohm answers in his book *Wholeness and the Implicate Order* (1980). Bohm exposes the power of paradigms in creating segmented thinking.

Fragmentation is continually being brought about by the almost universal habit of taking the content of our thought for ‘a description of the world as it is’. ... In this habit, our thought is regarded as in direct correspondence with objective reality. Since our thought is pervaded with differences and distinctions, it follows that such a habit leads us to look on these as real divisions, so that the world is then seen and experienced as actually broken up into fragments (Bohm, 1980, p. 4).

Thus, the urban-dwellers we work with, our urbanology students and we sociologists ourselves experience fragmentation, as a result of consciously or unconsciously believing that the way we see things *is* reality. Bohm then adds

If we regard our theories as ‘direct descriptions of reality as it is’, then we will inevitably treat these differences and distinctions as divisions, implying separate existence ... We will thus be led to the illusion that the world is actually constituted of separate fragments and ... this will cause us to act in such a way that we do in fact produce the very fragmentation implied in our attitude to the theory (Bohm, 1980, p. 9).

In essence, the result of the classical mechanics worldview gives rise to a disconnected understanding of our world, which impacts politics, the economy, urban theory, urban planning, social policy, sociology, race/ethnic relations, gender and intersexual dynamics in an urban context, as well as community organisations. Thus, Blacks and Whites are often separated in the minds of some by thought systems, which postulate that they

each correspond to distinct biological processes; urban and suburban sectors are perceived as having no connection with each other; developed and impoverished nations are seen as isolated from the other. Even when the connection is recognised, it is often forced through a fragmented focus resulting in some contrived construct. Let us consider globalisation, for example. While it gives an illusion of wholeness due to its superficial sense of inclusion, it is in reality an economic process that emerges from a certain sector of the developed world. It unfortunately can engender a world of alienation, separation and inequality, which benefits the privileged few at the expense of the disenfranchised many. The problems emerging from globalisation cannot be solved until there is a shift in paradigms—from fragmentation to wholeness—out of which can emerge truly effective solutions for all. Amit Goswami, theoretical physicist at the University of Oregon, here asks a crucial question

How did I acquire a worldview (more importantly, am I stuck with it?) that dictates so much separateness between me and my fellow humans, all of us sharing similar genetic, mental, and spiritual endowments? If I disown the outdated worldview that is based on material realism [that only matter is real and objects are independent of us] and investigate the new/old one that quantum physics seems to demand, might the world and I be once more integrated? (Goswami, 1993, p. 12).

Another piece of evidence that there is an underlying context of wholeness in the universe is one that you do not need to be a physicist to understand. The fact is, that the brain itself naturally operates holistically. Let me give an example. Notice how easy you are able to read the next paragraph even though it appears chaotic and disordered

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tihng is taht the frist and lsat ltteer be in the rghit pclae. The rset can be a taotl mses and you can sitll raed it wouthit a porbelm. Tihs is bcuseae the huamn mnid deos not raed ervey lteter by istlef, but the wrod as a wlohe (Davis, 2003).

The research alluded to here is from G. E. Rawlinson's unpublished 1976 PhD thesis from the Psychology Department at the University of Nottingham, titled, "The significance of letter position in word recognition" (Davis, 2003). This is an illustration of the insight that the human consciousness itself is actually oriented towards wholeness and not fragmentation. It is the very point David Bohm seeks to bring out in his book, *Thought as a System* (1994).

It thus becomes apparent that the erroneous prevailing worldview limiting urban studies and urban transformation emerges from classical physics, based on the Cartesian–Newtonian worldview, which has given rise to a philosophy of material realism where only matter is real and everything else is secondary phenomena. "Material realism poses a universe without any spiritual meaning: mechanical, empty, and lonely", Goswami observes. This is not so much a "crisis of faith" as a "crisis of confusion" (Goswami, 1993, pp. 11, 14). And most people, even most theologians and sociologists, are not even aware of this continuous crossover from physics to other branches of learning throughout history.

This is because the basic fallacy of this mindset is that the parts—discrete and discontinuous—organise the whole. The reverse is, in fact, the truth. The problem with a mechanistic approach then, is that it seldom moves from the parts to the whole, nor does it always see their interrelationships and interdependencies. Thus, 'you can't get there from here'. No matter how hard one tries, the problems plaguing our world—racism, poverty, AIDS, war, inequality, urban blight, violence, genocide, sexualisation, population displacement and dehumanisation—will not

be solved if the starting-point is a perspective of fragmentation. One needs to understand the gravity-like energy field—the context—that is undergirding and giving rise to all these global problems.

In teaching students how to be successful change agents in urban transformation, one must teach them how to recognise, understand and be effective in contexts other than their own. This is a crucial step, for the programmes they initiate and the policies they implement must be relevant to the particular context or social situation in which they find themselves. This metacognitive facility of successfully understanding differing contexts is critical to the training of effective workers in urban development, since urban workers are by definition at a different level of operational values than are the people they want to help. This is because the context that gives rise to the emergency emotions (shame, guilt, apathy, grief, fear, craving, anger, pride) that cultivate urban blight in neighbourhoods is not the same context that gives rise to the welfare emotions (courage, trust, willingness, acceptance, reason, love, joy, peace, compassion) out of which the urban workers are functioning (Hawkins, 1995). To project falsely one context on another, or to operate out of a totally incongruent context, leads to initiating projects that are ineffective in their environment and eventually results in burnout and a sense of failure when our faultily based solutions do not work and we do not know why.

Practical Implications in Urban Transformation

Where have we ever seen examples of people effecting social change by bringing this desired context of wholeness to underprivileged areas? This is a question crucial to the mission of faith-based organisations. Let us take the case of India, which has about half of the world's hungry people and where one of

the largest numbers of the world's poor is concentrated. Every three seconds, another child is born in India. At this growth rate, the population of India, which is one-third the geographical size of the US, will soon surpass China (Dey, n.d.). Of all the cities in India, Calcutta is possibly most symbolic of the destitution and misery of the world's poor. More poor people are found in Calcutta than perhaps in any other large world city. Hundreds of thousands live lives of despair and hopelessness on the streets in states of absolute poverty with no possible future but one of starvation and death. For most people, these are just meaningless statistics to be ignored in the same manner that the poor in Calcutta, or in other 'Calcuttas' of the world, are ignored and passed by. It is life lived at a consciousness level of apathy and society responds in kind.

Society often lacks sufficient motivation to be of any real help to cultures or individuals at this level and sees them as drains of resources ... It is the level of the abandonment of hope, and few have the courage to really look into its face (Hawkins, 2006, pp. 75–76).

Yet one person—the quintessential symbol of faith-based action—did truly have the courage to look right into the face of poverty and there saw 'the face of Jesus'. Mother Teresa saw in the poor, the homeless, the untouchables, the dead and dying in the streets of Calcutta the face and person of Jesus Christ. She related to them with this conscious reflection and the poor saw in her the face of Jesus looking back at them. Why did she see Jesus in the poor while the vast majority, even Christian workers, only see the destitute? It was due to the *context of wholeness* out of which she lived. Her holistic context—seeing the person of Jesus in the poor—fuelled the content of her ministry. Thus, by serving the poor, she was serving Jesus, who declared, "If you give even a cup of cold water in my name, you do it to me". And, "If you have done it to the least of

these, you have done it to me” (Matthew, 25, verses 35, 40).

Whenever persons volunteered to work alongside her Sisters of Mercy, Mother Teresa would carefully instruct them

When you minister with us to the poor and needy, I want you to look at them with eyes of love and touch them with hands of love and speak to them with words of love. Because it is not simply to the poor to whom you are ministering. It is to Christ. And each poor person, for the moment he is before you, is Christ to you and you are Christ to him. I urge you to look at them and see Jesus (Linthicum, 1991, p. 92).

In other words, she did not feel that it was enough for the urban workers just to politely offer food or medicine. Mother Teresa wanted them to reflect a new context, one that these deprived people had never before experienced—and, more than likely, neither had many of the volunteers.

From the very context of who she was emerged the content of what she did. Her consciousness influenced and energised those around her without even a word being spoken, for in her face, attitude and demeanour, the poor (and everyone else for that matter) saw the embodiment of God’s love and acceptance. The intentionality of her heart collapsed the wave function and thus created the actualisation of non-separation between her and the poor. This created a reality of oneness such that in the poor that she touched, she *saw* the person of Jesus Christ. This is the Heisenberg Principle in action, the conscious intention of the observer positively impacting the outcome, creating an experience of non-duality. Mother Teresa by her very ‘essence’—her *energy signature*—conveyed to the poor how she actually felt about them. Let me explain how this works.

Whether we know it or not, without saying a word, we are communicating to everyone we encounter a ‘sense’ of how we feel about

them and how we regard them. This sentiment, even when held unconsciously, gives rise within us to unspoken expectations based on our underlying beliefs. We are constantly transmitting a subtle, unspoken message, either one of unconditional love and oneness, or one of separateness or even indifference. People pick up on it once they enter our ‘energy field’, our sphere of influence. Our lips and actions may say one thing, but the energy context that surrounds us may convey otherwise. This is analogous to what Vincent R. Ruggiero (2007) calls ‘fringe thoughts’, a concept coined by Graham Wallas (1926). These are the peripheral thoughts, subtleties, nuances and sub-text of verbal and non-verbal communication found on the “fringe of consciousness” (Ruggiero, 2007, p. 157) that others respond to beyond what is said in speech. Thus, an urban worker, although meaning well and desirous of making a difference in a given community, may unknowingly convey an unconscious attitude of duality emerging from their perception—‘I’ve tried everything, but you people are not like me ... you are hopeless victims ... I don’t think anything that I do will make a difference ... Nothing seems to work!’ This double message may counteract the hard work that they do, since urban inhabitants are much more aware of context than is realised.

Since education is one of the principal ways of positively connecting with persons in a given community, let us examine three examples from urban education. Teachers exert a tremendous influence on their students. Without saying a word, their very spirit, attitudes and thought patterns, even on a sub-conscious level, are picked up by students. The reality of the influence of this tacit context was brought out by Rosenthal and Jacobsen (1966) in their classic and much cited study on how much of an outcome teachers’ expectancies could have on a group of children. Suggesting that a study of IQ was the focus of their experiment, they tested

the IQs of a select group of students at the beginning of the school year. They then informed the teachers which students in their classes had scored in the top 20 per cent and would thus be expected to be ‘bloomers’ that year. Unbeknownst to the teachers, the names on the list of the so-called ‘bloomers’ were actually randomly chosen ethnically diverse students with only average test scores. The teachers, however, believing what was told them, subtly conveyed their underlying belief to these students that they indeed were high-ability students, even though the students knew nothing about their true original test results. What was actually taking place, unsuspected by the teacher and the students, was the playing out of the Heisenberg Principle—consciousness interacting with the field—to effect a whole new outcome. Throughout the year, these students did make significant gains and their grades improved. However, to test whether the students had actually experienced academic gains rather than just receiving higher grades from teacher expectations, the researchers tested them again. Surprisingly, at the end of the year they demonstrated IQ test gains on a standardised test in some cases of more than 25 points.

Claude Steele at Stanford University gives a most sobering example of the reverse process, which all too frequently happens in urban schools. This is one where bright African American students (with combined SATs of 1200–1500), are devalued, ignored and treated with passive indifference by their teachers because of the devalued status of their race. Teachers then do not expect them to be brilliant and outstanding students. Even their same-race guidance counsellors often recommend that they move away from academically rigorous majors. The result is that these highly capable minority students who clearly have the mental acumen to succeed in the best universities, often end up with ‘academic demotivation’ and experience a

‘disidentification’ with school and often eventually drop out entirely (Steele, 1992). Again we see the Heisenberg Principle activated, from which emerges a context leading to a correlated outcome.

What can people do then in the face of such pervasive and overwhelming obstacles, such as racism? In actuality, quantum physics shows us that the participant-observer influence of just one dedicated person is sufficient to create a paradigm shift. This can positively affect the lives of many by counteracting the negative societal forces that keep multitudes from succeeding. Such was the case of Jaime Escalante who first enabled 18 Latino students from Garfield High School in East Los Angeles to pass the AP calculus exam in 1982. The examiners from the Educational Testing Service were so incredulous of such a feat that they had the students repeat the AP exam because they believed they had all cheated. On repeating the exam, all 18 passed again. [A movie was made of Escalante’s experience, *Stand and Deliver* in 1988.] By 1991, Escalante had empowered 570 Latino students from an urban public school in East LA to pass successfully the AP exam in calculus.

In all three of these cases, the teachers brought a change of context for their students, which resulted in different consequences. The prevailing method in urban development of working on surface content issues without addressing context is generally ineffective in the long term. Consequences can never be different *as long as the field remains the same*. The greater the shift in context, the greater the shift in content. Here then is one of the essential keys to effective urban transformation—focus on changing the context to one of wholeness *within the urban workers first*. They in turn can operate from a more powerful dynamic to influence the ‘attractor’ fields at work in urban environments.

What do all these people—the Mother Teresas, the Rosenthals and Jacobsens, the

Claude Steeles and the Jaime Escalantes—have in common? Why were these agents of change successful when others around them were not? There are two key factors. First of all, they all raised the bar and thereby gave people hope that someone believed things could be different. Mother Teresa got people off the streets and when healed sent them back out to help get others off the streets. Rosenthal and Jacobsen, Steele and Escalante raised the academic bar by giving students even more difficult challenges than they had experienced. By so doing, they prevented their students from gravitating to an attitude of anti-intellectualism (McWhorter, 2000). Secondly, they all operated by the Heisenberg Principle; their consciousness field influenced the outcomes. The intentional awareness of these participant-observers effected a transformation in the persons whose lives they not only ‘observed’, but also touched. In other words, they brought with them a context that the people they encountered were more than they presently were, irrespective of who they appeared to be or had been or what other people may have thought of them. In chaos theory, this is the introduction of ‘energy’ at the point of phase transition (Prigogine and Stengers, 1984), which enables a person to spiral upward. This sensitivity to initial conditions, known as the ‘butterfly effect’, has the effect of changing outcomes by just changing one critical feature.

Essentially, while these ideas come from quantum mechanics, we can see that these principles do not just apply to particles interacting at the sub-atomic level; they also apply to human beings interacting with the real world. The mere fact that in quantum mechanics the influencing observer exists on a macro scale gives evidence for implications for everyday life beyond sub-atomic physics. The oneness and interconnectedness discovered in quantum mechanics extends to all of us. Thus, the Heisenberg Principle influences the world we experience daily.

Context and Urban Problems: The Broken Window Theory

Let me further illustrate how an understanding of context can assist sociologists in interpreting data more analytically than when our focus is on observable urban dynamics alone. Urbanologists have long recognised the results of negative attractor patterns, although not necessarily using those words, when they observe crime in urban communities. In 1982, James Q. Wilson and George L. Kelling developed a seminal theory they called ‘the broken window theory’ (BWT), which essentially emerges in neighbourhoods that are at a tipping-point between a lower and a higher attractor pattern. (Made popular by Malcolm Gladwell (2000), the concept of the ‘tipping-point’ was first enunciated by T. C. Schelling in 1971 to discuss residential segregation. It has important conceptual implications beyond segregation, however, to the factors behind the emergence of urban blight.) This dynamic was the focus of Wilson and Kelling in their broken window theory. At what point can a neighbourhood, teetering on the edge of social change, be rescued from plunging headlong into physical disarray, social destitution and moral degradation? Their basic principle was this: *‘If a window is broken and left unrepaired, people walking by will conclude that no one cares and no one is in charge.’* Soon an irreversible decline sets in and the neighbourhood spirals downward towards urban blight. It is not just a ‘broken window,’ but also *graffiti*, garbage in the streets, abandoned cars, shattered glass and unkempt yards, all of which serve as ‘broken windows’ showing that ‘no one cares’ and thus escalate urban decay. This is because “serious street crime flourishes in areas in which disorderly behavior goes unchecked” (Wilson and Kelling, 1982). The best way then to fight serious crime, suggests the theory, is to fight the disorder that precedes it ... *graffiti*, panhandling, uncollected trash

and unrepaired buildings. The police should begin walking the beat and interacting with residents, thereby bringing to them a sense of order, stability and a higher attractor pattern that reassures law-abiding residents that they can stay in the community.

What is sometimes misunderstood is that the broken windows are not the *cause* of a neighbourhood decline, but are rather a *symptom* of the underlying lower attractor patterns that are operative in the neighbourhood. What is taking place here is that people are tuning in to certain ‘morphogenetic fields’ (Sheldrake, 1981/1995). These are attractor fields of ‘collective consciousness’ which influence thinking, behaviour and the pattern or form these take. This is not about ‘causality’. What attracts negativity is not the broken window as a sequential causation, but the ‘field’. The broken window does not ‘cause’ something to happen. Rather, the negative attractor energy field present in the community is the source. From this ‘context’ emerges the ‘content’ of broken windows, car thefts, garbage-littered streets, drug infestation, prostitution, gangs, violence and the downward spiral towards community disintegration. David Hawkins describes the process and how these energy fields work

Unless early signs of decline are corrected in a neighborhood, they attract further abuses, damage, and neglect, and the rate of decline accelerates as though there were a magnet-like attraction to all that is negative. It starts with graffiti and eventuates into gang turf warfare, drugs, shootings, and arson. Thus, the attractor fields of consciousness levels act as though they have a magnetic attractor or repellent effect on other energies, almost as though they were charged or polarized. It is the attractor field of the negative energy of apathy that attracts the classical social expressions of poverty, crime, overpopulation, and structural decline (Hawkins, 2003, p. 206).

This is related to the phase transition in chaos theory, in which a system spirals downward

rather than upward. Thus, the BWT will tend to be most appropriately applied in the context of urban communities that are at a tipping-point and will be progressively less applicable to those that have already plunged into a more disintegrated system that is dominated by the lower attractor patterns.

What then can bring change to a system that has already disintegrated past the tipping-point? If the windows are fixed but the underlying negative attractor patterns remain the same, one can pretty much expect that the ‘windows’ will just be broken again. And well-meaning social change agents will be scratching their heads thinking, what went wrong? ‘Didn’t we fix those broken windows? Didn’t we just organise a neighbourhood clean-up day?’ This is simply trying to address content while ignoring context, which is like trying to rearrange the deck chairs on the Titanic.

Robert J. Sampson and Stephen W. Raudenbush (2004) revisited the broken window theory. They concluded that something more than just ‘fixing windows’ needed to take place to turn neighbourhoods around and it had to do with ‘context’.

Theories about broken windows also are at stake, even though we say nothing here about the causes of crime. Attempts to improve urban neighbourhoods by reducing disorder—cleaning streets and sidewalks, painting over graffiti, removing abandoned cars, reducing public drinking and the associated litter, and eliminating sources of blight such as prostitution, gang gatherings, and drug sales—are admirable and may produce many positive effects. They seem to be the urban policy of the day. Nevertheless, our results suggest that these steps may have only limited payoffs in neighborhoods inhabited by large numbers of ethnic minority and poor people. The limitation on effectiveness in no way derives from deficiencies in the residents of such neighborhoods. Rather, it is due to social psychological processes of implicit bias and

statistical discrimination as played out in the current (and historically durable) racialized context of cities in the United States. In other words, simply removing (or adding) graffiti may lead to nothing, depending on the social context (Sampson and Raudenbush, 2004, p. 337).

Although their research suggested to them that “social psychological processes” were at work, they identified these processes, not as “deficiencies in the residents” of such neighbourhoods, but rather as “bias and statistical discrimination” *out there* in the “current (and historically durable) racialized context of cities in the United States”. In so doing, Sampson and Raudenbush clear the community residents, urban workers, sociologists and urbanists of any possible ability really to change what is happening in the neighbourhood and the operative patterns working within. In their view, the crux of the problem seems to lie ultimately in “bias” and the “racialized context of cities”. And after all, who of us can stop all racism? By blaming the system ‘out there’ that is separate from us (Newtonian thinking), none of us as individual urban workers can consequently really be blamed for not making any dent in those problems and the residents certainly cannot be blamed since they are the victims. While this might at first feel like a relief for us all to be blameless and not responsible, this conceptualisation carries with it the paradox that the Heisenberg Principle now prevents us from becoming effective change agents. Our underlying consciousness is communicating to urban residents that really nothing can be changed; nothing can make an impact. We thus bring with us at the moment of phase transition—when positive energy is needed—the ineffectual consciousness of the observer-participant who unconsciously conveys that it is an impossible situation and nothing can be done for this ‘segment’ of society because of overwhelming socio-historical factors.

Ironically, both the urban workers and the urban residents can ultimately find themselves in states of social apathy, with no positive transfer of energy having subsequently taken place to bring the system in chaos up to a higher level of social order. In actual fact, this phenomenon of consciousness is well known in medicine as the ‘nocebo effect’ (Barsky *et al.*, 2002; Dunn, 2005), which is “placebo’s evil twin” (Reid, 2002). In this dynamic, the patient receives no health benefit even from an efficacious medicine due to the negative projection that ‘it won’t work’. When one presumes the worst, that is what one usually gets (Reid)—as Claude Steele’s research confirms. This illustrates the overriding power of consciousness and how it underpins and connects the whole in ways that are still being discovered. This phenomenon has already been researched and amply discussed by Merton as the ‘self-fulfilling prophecy’ (Merton, 1968).

However, rather than trying to assign blame on anyone—victims, urban workers, sociologists or societal systems—this paper explores what we all can do even in the face of severe systemic problems. Jaime Escalante, for one, could not stop the racism, but he did not start off with the unconscious premise that his students were going to be stopped by it. He did not start out with the presupposition that his students were helpless victims of urban malaise and therefore little could be expected of them. That would have limited the parameters of what he and his students could do. Like iron filings to a magnet, Escalante drew his students into a new context of self-efficacy through his own consciousness and instinctive use of the Heisenberg Principle. What Escalante, Rosenthal and Jacobson, Steele and Mother Teresa did was to understand intuitively the importance of the ‘phase transition’ of chaos theory. This is the point at which a person, a neighbourhood or system bifurcates and spirals upward to a higher

level of complexity, or conversely spirals downward to disintegration. It is critical whether or not positive energy is infused at that point, as Prigogine discovered (Prigogine and Stengers, 1984).

Wilson and Kelling (1982) recognised this in their original theory and showed how police officers walking the beat in crime-infested neighbourhoods effected change. Yet what they may not have been aware of was that it was not just the ‘physical presence’ of police officers walking the streets that deterred crime, but the positive intention (Heisenberg Principle) of the officers themselves. This was manifested in their attractor patterns, their level of consciousness in interacting with community residents, getting to know them by name, feeling a part of the community, all of which infused positive energy into the community and spiralled the neighbourhood upwards.

Jane Jacobs, moreover, pointed out that ultimately

The public peace—the sidewalk and street peace—of cities is not kept primarily by the police, necessary as police are. It is kept primarily by an intricate, almost unconscious, network of voluntary controls and standards among the people themselves, and enforced by the people themselves (Jacobs, 1961, p. 32).

When neighbourhood residents come together on a daily basis to celebrate life on the streets, they engage in a “sidewalk ballet” of group interaction with “distinctive parts which miraculously reinforce each other and compose an orderly whole” (Jacobs, 1961, p. 50). This holistic dance of social cohesion results in what Jacobs called ‘eyes on the street’, the most critical element in safeguarding neighbourhoods.

The most recent critique of the broken window theory was made in a very sophisticated and careful study by Bernard Harcourt and Jens Ludwig (2005). They claim to have refuted the BWT in an experiment known as

‘Moving to Opportunity’ (MTO) in New York and five other cities, which they declare “is arguably the first truly rigorous test of the broken windows hypothesis”. In the experiment, some 4800 low-income families from “high-crime public housing communities characterised by high rates of social disorder” were relocated to “less disadvantaged and disorderly communities”, with more “high-status households”. From their understanding of the BWT, given that these families were relocated to neighbourhoods with less incidence of crime, there should follow a reduction in criminal behaviour. What they found was that the opposite took place; there was no decrease in crime. Rather, criminal activity took place in these places where before there had been low incidences of crime. Thus, according to Harcourt and Ludwig, the BWT is refuted (Harcourt and Ludwig, 2005).

The basic flaw with this study is that Harcourt and Ludwig, as well as others, seem to believe that the BWT is an ‘external’ causal factor. What they have done is to reverse the explanation, believing that *content* should determine context, when in actuality *context* determines content. Persons engaging in lower attractor patterns of criminal behaviour in a crime-infested location, are quite likely to continue to engage in criminal behaviour if only their physical location changes. Even Wilson and Kelling themselves were possibly not aware that what the BWT actually measures is not the content of broken windows or other signs of urban blight, but the context of the negative attractor patterns at work in the lives of the residents in the community. People who operate out of low energy and negative attractor fields will tend still to tune to those attractors through non-linear dynamics, even though they may find themselves in a new locale. Oscar Lewis calls it the “culture of poverty” (Lewis, 1966). Rupert Sheldrake calls it ‘morphogenetic fields’—attractor fields of ‘collective consciousness’ which influence thinking, behaviour and the pattern of action,

linking all people that come within its invisible influence, across time (Sheldrake, 1981/1995). The problem, thus, is not the 'content' of garbage in the streets or the quantity of broken windows, but the qualitative 'context' of the mind, the collective consciousness of the neighbourhood, which often does not extend beyond an individual 'I don't give a damn' attitude. This is why the presence of an organised 'neighborhood watch' and 'community cops' in the neighbourhood is important. However, this is not to say that all police officers automatically bring a positive energy field with them to a community. Some, by their own negative energy and consciousness, could even spiral a neighbourhood further downward.

Whether or not we approve of his political correctness, Muhammad Ali's comments as an insider illustrate a deep understanding of this impact of attractor fields. He candidly explained the situation

The slum is not in the neighbourhood, the slum is not in the ghetto, the slum is in the people. The people make the slum. And the condition our people are in now, if you gave them a 93 million dollar project, they will make a slum out of it in 24 hours (Jacobs, 1970).

He subsequently added what would happen with a different context and operative level of consciousness, "Then you can take a nation of people who are intelligent and they can make a slum a paradise" (Jacobs, 1970). He instinctively understood the importance of context and how attractor fields work. As was stated previously in this paper, the resulting consequences can never be different as long as the field is the same. The attractor patterns are not only in the neighbourhood, but also in the people themselves. And unless these people spiral upward to higher levels of consciousness and positive behaviour, finding themselves in a decent neighbourhood will unfortunately only give them a more lucrative

opportunity to continue committing crime.

Thus, Harcourt and Ludwig's 'rigorous' experiment does not falsify the broken window theory—it affirms it. The test actually demonstrates the importance of context and the presence of non-local energy fields. This is what Sampson and Raudenbush (2004, p. 337) themselves concluded, that eliminating *graffiti*, removing abandoned cars, cleaning up streets and getting rid of all signs of urban blight "may lead to nothing, depending on the social context". The real test, therefore, is the 'context' operant in the people themselves, their operational values system—that pre-theoretical framework for the development of a worldview, a set of priorities, a paradigm and a mindset (Graves, 1974). This values system or context consequently serves as a 'structural scaffold' for behaviour and deep-level thinking (Beck and Cowan, 1996). It also reveals the attractor patterns operative in their lives. These value systems are also what conversely keep people from committing crime, no matter where they may reside, depending on these positive energy fields at work. Thus, by not investigating the attractor fields from whence these negative or positive social dynamics emerge as the 'social context', we miss the source of urban problems. What all this means is that long-term urban transformation must be from within, at the root, in order to produce a lasting external change. All external change without the internal is futile.

Wholeness and Urban Theory

What are the implications of all this for urban planning, urban theory and the social transformation of cities, as well as for economic development organisations? It means a great deal, for all this makes a significant and qualitative change.

One of the problems of urban life for many urban-dwellers in impoverished stricken areas is that because of socioeconomic

circumstances and/or levels of consciousness, they experience few opportunities for making lasting change in their lives due to the limited choices available. Even when a door of opportunity may present itself, the trauma of their level of poverty fragmenting them from the whole, may blind them from seeing the door or may immobilise them from going through it. And it may prevent them from recognising that they stand at a critical choice point, a 'phase transition', where they either spiral upwards towards self-reorganisation or downwards towards self-destruction.

Kai Erickson wrote some very important thoughts about the immobilising effect of the trauma of poverty and the fragmentation of spirit in which it leaves people.

It has long been recognized ... that living in conditions of chronic poverty is often traumatizing, and if one looks carefully at the faces as well as the clinic records of people who live in institutions or hang out in vacant corners of skid row or enlist in the migrant labour force or eke out a living in the urban slums, one can scarcely avoid seeing the familiar symptoms of trauma—a numbness of spirit, a susceptibility to anxiety and rage and depression, a sense of helplessness, an inability to concentrate, a loss of various motor skills, a heightened apprehension about the physical and social environment, a preoccupation with death, a retreat into dependence, and a general loss of ego functions. One can find those symptoms wherever people feel left out of things, abandoned, separated from the life around them. From that point of view, being too poor to participate in the promise of the culture or too old to take a meaningful place in the structure of the community can be counted as a kind of disaster (Erickson, 1976, pp. 255–256).

David R. Hawkins called this level of consciousness and state of existence, 'the level of apathy' (Hawkins, 2006). It is one in which many urban communities find themselves. How does quantum mechanics help us as sociologists to address this hopelessness?

Newtonian vs Quantum Answers

In essence, changes in context provide the greatest *tendency* towards an upward spiral in an urban community. With Newtonian physics, however, there is unconsciously believed to be a one-to-one causal sequence leading to one correct answer to urban problems. This is discovered with quantum mechanics not to be true. Thus, those with a mindset emerging out of a Newtonian paradigm may expect to find here in this paper or in some 'objective' social experiment the flawless, evidence-based answer to urban problems. After all, in the Newtonian framework, we feel we are all discrete entities who accept as true that somewhere 'out there' is the perfect solution—a sequence of steps, a magic bullet that should 'scientifically' and 'objectively' cause urban locals to be transformed, if we could just find it. What quantum mechanics teaches us, however, is that reality is quite different. There is not a problem 1A, which has a solution 1B that leads to outcome 1C; then problem 2A has solution 2B, which leads to outcome 2C. This is the underlying deterministic paradigm of the researchers in the BWT who hoped to find the solution simply by moving those families to a lower-crime area. They perhaps hoped for a predictable, external solution to an internal dynamic emerging from the implicate order. By now, we sociologists should be recognising that these one-dimensional approaches do not work. People are not pawns or objects. They have a free will, just as urban workers have volition. So, how can we *make* them change? We cannot. A person forced to 'change' against their will has not really experienced any transformation.

Instead, what we find in quantum mechanics is that there are '*tendencies*'. Thus, if urban workers, like Jaime Escalante, bring a context of wholeness and compassion to their work, it is *more likely* that urban residents will tend to respond to this sensitivity to initial conditions and be able to tune into higher

attractors themselves. In the end, the urban-dwellers are equal stakeholders in whether or not they rise to a new level. Jaime Escalante did not, for example, treat his students like victims of the system, or as hopeless casualties of poor schooling, racist teachers, gang-infested neighbourhoods and urban blight. If that were the total picture, how could anything in the students' lives ever be better? If the students in East LA were just victims, then the answer lay outside themselves for someone else or society to try to fix some day. However, operating within the new context of their being full participants in the whole allowed Escalante's students then to respond with their own inner context change; this allowed them to become successful on a high level themselves. They voluntarily began taking calculus classes on Saturdays, because there had begun an internal change in their own paradigm. Thus, they had new possibilities open to them because of their own choice for change.

Self-respect and dignity are something all people discover within themselves and cannot be externally transferred to those living in urban environments, even though we sociologists wish we could. Each person holds the key ultimately to making different choices. The intention here is not 'blaming the victim' but rather recognising that there is genuine empowerment when people choose a different response because that is now their own choice. In other words, urban-dwellers are equally as much the 'Whole' as we are. We cannot take away people's power to choose their own path by simply imposing on them external solutions, such that the right answer is 'out there'. This Newtonian approach to urban problems (that the universe is separate from the observer) is not only generally ineffective, it leaves neighbourhood residents as helpless victims, devoid of the self-respect that arises from taking personal responsibility. Through a quantum focus, however, we can inspire them to alter their own outcomes

by bringing them the confidence that they are cared about and welcomed (Mother Teresa); truly intelligent and capable (Rosenthal and Jacobson); can reach as high as any other population group (Steele); and that we will give of ourselves to facilitate their success (Escalante), so that they can experience equally being as much an important part of the whole as we are.

Successful urban workers and community organisations seek to identify these critical opportunities and crucial life conditions, and to provide alternatives that facilitate significant choice points leading to new developmental paths. One of the goals of community initiatives is to create alternatives when people are stuck in a limited worldview and blindly cannot see the options, or new contexts within which to operate.

Choice Points

Hugh Everett III, a Princeton physicist, called these phase transitions a 'choice point' (Everett III, 1957). Choice points are those critical moments in time when the course of any event or life may be changed by the choices made. Each choice leads to a whole new 'world' in our life.

A choice point, according to Everett, is like a bridge, making it possible to begin one path and then change course to experience the outcome of a new path. But these opportune moments to redefine outcomes may come only at specific intervals where the roads of time bend their courses and approach other roads. Sometimes the roads are so close that they touch. You can make a choice to continue the current course to its end, or choose to take a new course (Rice, n.d.).

Of course, we would all desire that the people living in low-income projects could see these choice points for themselves, but they are not the only ones who are at a choice point.

From a human framework, the point of this paper is for us as sociologists *consciously* to perceive poor people in a new light, like the teachers who believed certain students would become ‘bloomers’ that year; like Mother Teresa’s giving people ‘hope’ as a result of genuinely perceiving them as valued beings; like Jaime Escalante putting energy into kids to visualise their having a future. As we learn from quantum mechanics, and as Bourdieu detected, we are not just observers but also participants. We can bring urban residents a new context at sensitive choice points. All it takes is a shift in awareness to see multiple possible options and choices available.

What I am emphasising here is an underlying understanding of quantum mechanics that stresses our connection with the entire biosphere and even the universe, so that future urban workers have a context out of which they can draw effective solutions for the future. Imparting to them this base of contextual understanding is crucial, since we cannot give them content-only solutions, such as ‘If this event happens, class, do this’. No. One cannot foresee all possible contextual aspects of the future and all the social problems students will be grappling with over the span of their lifetimes in order to tell them what to do ahead of time. Many politicians and urban organisations spend billions and try for years seeking to solve urban social problems, yet often seem to be no further ahead than before. This is because they are generally focused on content and one cannot deal with content faster than the human mind is able to produce it. “It is a losing game”, says Hawkins (2003, p. 40). We just cannot teach enough content to address every possible scenario students are going to come up against. Thus, we need to teach students to begin “identifying with the field rather than with the content of the field” (Hawkins, 2006, p. 123).

We must give them the broadest base of a holistic context that will enable them to produce creatively specific solutions to an

ever-complex world that has innumerable permutations to each decision. Shifting their focus to context will enable them to see practical solutions they could not see before while focused on content. This is what evolutionary biologist, Elisabet Sahtouris, has stated so clearly

Intelligence means being able to see the many levels of the whole in space and time and taking them into account when making a decision ... It’s all about context. The larger your context is, the more intelligent your decisions will be. It’s about being able to think at different levels of reality at the same time (Touber, 2006).

This is the kind of multilevel thinking students need to draw on for addressing the problems of our global urban world.

This shift of awareness needs to be a conscious skill the students need to develop and be able to employ in analysing and synthesising the spiral of development in urban environments. We must consciously treat the city as holistic—a ‘single state’. So also is our global reality; we live in one world. This transformation must come within us first, before we can see how to help others change. Thus, urban workers must be aware of their own conscious influence that takes place through the Heisenberg Principle regardless of the specific programme they are implementing.

The Wholeness of Change

In this paper, I have followed the recommendation by Edward O. Wilson (1999) in *Consilience: The Unity of Knowledge*, who suggests that we need to bridge the academic information gap. This ‘gap’ has resulted in a *reductionist* rather than a *transcending* base of knowledge. Wilson writes that

The greatest enterprise of the mind has always been and always will be the attempted linkage of the sciences and the humanities.

The on-going fragmentation of knowledge and resulting chaos in philosophy are therefore not reflections of the real world but artifacts of scholarship (Wilson, 1999, p. 8).

Thus, I have sought to combine three major disciplines—the physical sciences, the social sciences and the humanities—that normally do not cross-communicate. My intention is to apply knowledge from diverse fields of academia to address better issues of concern in society.

In essence, I have put forth the idea that the onus of responsibility for change must come from within—from within ourselves as academicians, from urban workers, from within the neighbourhood, from within the community, from within the individuals in the community. All of us are stakeholders, since we are all part of an unbroken wholeness. I have sought to provide a fresh framework for understanding the city and the work for urban transformation. Quantum physics with its non-dualistic approach to life provides such an approach, one that will enable urban workers literally to think outside their prevailing paradigms.

In light of this, the new kind of urban leaders needed in this third millennium are 'one world' visionaries who are capable of a diversity of thinking levels. They are civic leaders who no longer take a 'one size fits all' approach to urban planning and neighbourhood revitalisation, but rather they are ones who understand that the content of urban transformation arises from an awareness of the context of the attractor forces at work.

As social change agents, we cannot reduce human suffering and bring ignorance to an end if we fail to see the connection between content and context, between the internal and the external. We heal our segregated cities and fragmented planet through wholeness operating from within. This healing wholeness is brought about through the

deep understanding of our human oneness. Just being consciously aware of this piece of information will open choice points to facilitate transformation in society.

Notes

1. He was awarded the Nobel Prize for Physics in 1921 for one of the papers, 'The photoelectric effect', which gave rise to quantum physics, and not as many think, for his theory of relativity, the third of the three papers. The year 2005 was designated by the United Nations as the World Year of Physics commemorating the pioneering contributions of Albert Einstein in 1905 (see <http://www.physics2005.org/>).
2. For a discussion of quantum mechanics and spirituality, see Rosado (2003).
3. Karl Pribram (1976) came to the same conclusions with his studies on how the brain organises memories. He concluded that the brain is holographic.

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