But What About That Gigantic Elephant in the Room?

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When I began my career, more than half a century ago, behaviorism had a stranglehold on the field of psychology. It focused almost entirely on learning by direct experiences through paired stimulation and response consequences. This type of theorizing was at odds with the conspicuous social reality that much of what people learn is through the power of social modeling. Direct experience is an unmercifully tough teacher. Hence, people shortcut the tedious, costly, and potentially hazardous process of trial and error by observational learning from the myriad modeling influences in their social and symbolic environment.

Believing Can Be Blinding

Early in the behavoirist era, Watson and Thorndike proclaimed the non-existence of observational learning with a few cursory animal studies. It did not stop puppies from learning by observation novel ways of securing rewards, or chimpanzees raised in a human household from dressing up, applying lipstick, and prying lids off cans with screwdrivers. In the more contemporary theorizing, Skinnerians converted social modeling to a conditioned reinforcer. Hullian theorists recast modeling as simply a special case of discrimination learning. A model provides a social cue, the observer performs a matching response, and its reinforcement strengthens matching behavior.

It was in this inhospitable conceptual climate that I launched a program of research on the determinants of observational learning and the mechanisms through which it operates. In the conceptual scheme informing this research, social modeling through observational learning was governed by four constituent processes (Bandura, 1986). Attentional processes determine what is selectively observed in the profusion of modeling influences and what information is extracted from ongoing modeled events. People cannot be much influenced by observed events if they do not remember them. Through representational processes the information conveyed by modeling influences is converted to memory codes. Translational processes come into play in turning

symbolic conceptions into appropriate courses of action. Motivational processes regulate whether people act on what they have learned observationally.

Diverse lines of research testified to the centrality and pervasiveness of observational learning and added to our understanding of how it works. Social cognitive theory also broadened the scope of the effects of social modeling and the functions it serves. In addition to promoting cognitive and behavioral competencies, modeling influences were shown to alter motivation, create and modify emotional proclivities, serve as social prompts that activate, channel and support given styles of behavior, and shape images of reality.

Social modeling was gaining recognition but there were a number of entrenched misconceptions about it that put a damper on research on this powerful mode of learning and social influence. They had to be laid to rest. One such misconception was that modeling, construed as "imitation," could produce only response mimicry. The caricature of social modeling as "monkey see -- monkey do" is mistaken monkey business. In fact, most modeling is generative rather than superficial mimicry. Examplars usually differ in content and other details but embody the same underlying principle. For example, the passive linguistic form may be embodied in any variety of utterances. Modeling involves abstracting the information conveyed by specific exemplars about the structure and the underlying principles governing the behavior rather than simply mimicking the specific exemplars. In abstract modeling, it is generative rules rather particular exemplars that are being learned from the modeled information. Once individuals learn the guiding principle, they can use it to generate new versions of the behavior that go beyond what they have seen and heard.

Another oft-repeated misconception concerns the scope of modeling. Many activities involve cognitive skills on how to acquire and use information for predicting and solving problems. Critics argued that modeling cannot build cognitive skills because thought processes are covert and are not adequately reflected in modeled actions, which are the end-products of the cognitive operations. This was a limitation of conceptual vision rather than an inherent limitation of modeling. Cognitive skills can be made observable and are effectively cultivated by cognitive modeling. In this approach, models verbalize aloud their reasoning strategies and cognitive self-management of motivation and affective reactions as they engage in problem-solving activities.

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Another misconception requiring retirement claimed that modeling is antithetical to creativity. Quite the contrary. There are several ways in which modeling promotes innovativeness. Modeling novel ways of thinking and doing things fosters innovativeness in others, whereas modeling conventional styles curtails it. When exposed to diversity in modeling, individuals usually do not pattern their behavior solely after a single model. Rather they combine various aspects of different models into new blends of characteristics that differ from the original sources. Through the process of selective hybridization, diversity of modeling can spawn emergent novelty. It should also be noted that intended innovations are rarely entirely new. Rather, creativeness usually involves synthesizing existing knowledge into new ways of thinking and doing things. Innovators select useful elements from different exemplars, improve upon them, synthesize them into new forms, and tailor them to their particular pursuits. In these diverse ways, selective modeling serves as the mother of innovation.

There is still another well-entrenched misconception that requires correction. This concerns the oft-cited Bobo-Doll experiment on the transmission of novel forms of aggression through social modeling. Diverse lines of research identified four separable classes of effects of exposure to modeled aggression. It can teach novel aggressive styles of conduct; weaken restraints over interpersonal aggression by legitimizing, glamorizing, and trivializing violent conduct; desensitize and habituate viewers to human cruelty; and shape public images of reality by how it represents social and power relations and the norms and structure of societies. Clarification of each of these separable effects requires a different methodology.

The mistaken critique, which continues to be repeated in our textbooks, is that the study used a non-human target and Bobo Dolls are for punching. The Bobo doll laboratory experiments were designed to clarify *observational learning*. The methodology for measuring learning effects requires conditions in which viewers feel free to reveal all they have learned. In the case of aggression, this requires simulated targets rather than retaliative ones. To use human targets to assess the instructive function of televised influence would be as nonsensical as to require bombardiers to bomb San Francisco, New York, or some other inhabited locations to test their level of acquisition of bombing skills.

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We were not interested in whether children punched the Bobo Doll. Rather, we measured whether children assaulted it in the novel modeled ways, such as pummeling it with a mallet and voicing the novel aggressive neologisms as they assaulted the doll. Children in the central condition never exhibited the novel forms of aggression. Although modeled aggression was only one among a variety of experimental methods we used to clarify the mechanisms governing observational learning, it is the only one that is featured in portrayals of social cognitive theory.

Our major theories of human behavior were formulated long before the revolutionary advances in communication technologies. A growing influential source of social learning is the pervasive symbolic modeling in the cyberworld through the electronic media. Unlike learning by doing, which requires altering the actions of each individual through repeated trial and error experiences, symbolic modeling can transmit information of virtually limitless variety to vast populations simultaneously in widely dispersed locales. The electronic era is transforming the nature, reach, speed, and loci of human influence (Bandura, 2002). Life in the cyberworld is enhancing the primacy and reach of symbolic modeling. Modeled new ideas, values, and styles of behavior are now being rapidly spread worldwide in ways that foster a globally distributed consciousness.

A Dose of Agency for the Reductionistic Revival

Social cognitive theory is founded on an agentic perspective toward human self-development, adaption, and change (Bandura, 2006a). To be an agent is to influence the course of events by one's action. In this view, people are contributors to their life circumstances not just products of them. Personal agency operates within a broad network of sociostructural influences. In these agentic transactions, people create social systems and the practices of social systems, in turn, influence how people live their lives.

The exercise of human agency is dismissed by physical eliminationists on the grounds that human behavior is regulated by neuronal mechanisms operating at a subpersonal level outside of one's awareness and control. Deliberative, reflective, self-referential, and other high-level cognitive events are dismissed as epiphenomenal events that create an illusion of control but actually have no effect on how one behaves. In this view, humans are essentially conscious hosts of automata that dictate their behavior subpersonally.

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Proponents of this view frame the issue of personal regulation in the wrong terms at the wrong level of control. In acting as agents, individuals obviously are neither aware of, nor directly control their neuronal mechanisms. Rather, they exercise second-order control. They do so by intentionally engaging in activities at the macrobehavioral level known to promote given types of outcomes. In pursuing these activities, over which they can exercise control, they shape the functional circuitry and enlist the neurophysiological events subserving their pursuits. To use an analogy, in driving an automobile to a desired place, the driver engages in coordinated acts of shifting gears, steering, manipulating the gas pedal, and applying brakes. These deliberate acts, which the driver controls directly, regulate the mechanical machinery to get safely to where the driver wants to go. But the driver has neither awareness nor understanding of the correlative microcombustion, transmission, and braking processes subserving the driver's purposes. The deliberate planning of where to go on a trip, what route to take, what to do when one gets there, and securing reservations for these diverse activities far in advance requires considerable proactive top-down cognitive regulation. The internal combustion engine is the subserver not the deliberative agent of the trip.

Each level of complexity-- atomic, molecular, biological, psychological, and social structural-- involves emergent new properties that are distinct to that level and, therefore, must be explained in its own right. For example, knowing the locality and brain circuitry subserving learning can say little about how best to motivate people to attend to, process, and organize relevant information; and whether learning is better achieved independently, cooperatively, or competitively. The optimal conditions must be specified by psychological principles. There is little at the subatomic or neuronal level that can tell us how to develop efficacious parents, teachers, and social reformers or how to build and run social systems.

The sensory, motor, and celebral systems are tools people use to accomplish the tasks and goals that give meaning, direction, and satisfaction to their lives (Bandura, 2008; Harre & Gillet, 1994). An aspiring pianist for example, has to practice tenaciously to train the brain, build muscular strength and dexterity, and hone sensory acuity to realize a virtuoso performance. It is not as though the neural network is really the pianist and the indefatigable musician is just a self-aggrandizing illusionist.

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Addressing Contentious Dualisms

Contentious dualisms pervade our field pitting individualism against collectivism, autonomy against interdependence, agency against communion, and social structure against personal agency. Among these dualities, the construal of individualism and collectivisim as monolithic cultural traits is especially prevalent in our field. Sometimes they come with biased positive and negative attributed values.

Cultures are dynamic and internally diverse systems, not static monoliths. The categorical approach masks extensive intracultural diversity and important differences in cultures assigned to the same category. Not only are cultures not monolithic entities but they are no longer insular. A variety of social forces, including transnational interdependencies, global market forces, and the growing primacy of cyberworld in people's lives worldwide, is homogenizing some aspects of life, polarizing other aspects, and fostering a lot of cultural hybridization.

It is widely claimed that Western theories lack generalizability to non-Western cultures. One must distinguish between basic human capacities and how culture shapes these potentialities into diverse forms. For example, social modeling is essential for self-development and functioning regardless of the culture in which one resides. Modeling is a universalized human capacity. But what is modeled, how modeling influences are structured, and the purposes it serves varies in different cultural milieus.

The same distinction in levels of analysis applies to perceived efficacy. A common duality misconstrues self-efficacy as self-centered aggrandizement of an autonomous self and contrasted with an interdependent communal one. Self-efficacy does not come in only an individualistic form, nor with a built-in value system. People's belief in their efficacy is exercised in individual, proxy, and collective forms. Social cognitive theory, is therefore, just as relevant to human attainments realized through interdependent collective effort as to those achieved individually. The relative weight given to individual, proxy, and collective modes of agency in the agentic blend may vary cross-culturally. But all agentic modes are needed to make it through the day wherever one lives.

In the agency/communion duality, agency is often negatively portrayed as the egocentric exercise of power and personal domination, whereas communion is benignly characterized as

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socially caring and oriented toward the common good. In point of fact, the agentic exercise of efficacy can serve communal purposes, and collectiveness can be stifling and oppressive.

Being immobilized by self-doubt about one's capabilities and belief in the futility of effort has little adaptive advantage. A growing body of research shows that, indeed, a resilient sense of efficacy has generalized functional value regardless of whether one resides in an individualistically-oriented culture or collectivistically-oriented one (Bandura, 2002). But how efficacy beliefs are developed, the form they take, the ways in which they are exercised, and the purposes to which they are put vary cross-culturally. The cross-cultural findings debunk the misconception that belief in one's efficacy is an egocentric orientation wedded to Western individualism.

In short, there is a cultural commonality in basic agentic capacities and mechanisms of operation, but diversity in the culturing of these inherent capacities. In this dual-level analysis, universality is not incompatible with manifest cultural plurality. Cultural variations emerge from universalized capacities through the influence of social practices reflecting shared values and norms, incentive systems, role prescriptions, and pervasive modeling of distinctive styles of thinking and behaving.

Going Global With Social Cognitive Theory

The value of a theory in the social sciences is judged by three criteria: explanatory, predictive, and operative power. Explanation is the easiest criterion to fulfill because one can devise a coherent scheme to account for events after the fact. Prediction is a tougher criterion but one can foretell events without knowing why they occur. Theory-derived predictions are more informative, however. The value of a theory is ultimately judged by its power to provide reliable guides for effecting change. If aeronautical scientists developed aerodynamic theories but could never build an aircraft that can fly, their theorizing would not be taken seriously.

Global applications of social cognitive theory to promote society wide changes testify to its efficacy to improve the quality of life in diverse cultural milieus (Bandura, 2006b). These applications, which reach millions of people in Africa, Asia, and Latin America, address some of the more urgent global problems. Using long-running serialized dramas as the vehicle for personal and social change, this model helps people to see a better life and informs, enables, and

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motivates them to take the steps to realize it. The generic principles are generalizable to diverse cultures with functional adoptions tailored to particular cultural values and social conditions. Worldwide applications of this model are raising national literacy, enhancing the status of women in societies in which they are marginalized and denied their liberty and dignity, reducing unplanned childbearing that perpetuates the cycle of poverty, curtailing the spread of the AIDS epidemic, promoting environmental conservation practices, and in other ways bettering people's lives. Tell the millions of people worldwide who have improved their lives that the type of theory guiding this effort is a self-centered Western theory that is not generalizable to non-Western cultures.

Shunning the Fortuitous Aspect of Life

There is much that people do planfully to exercise some measure of control over their self-development and life circumstances. But there is a lot of fortuity in the courses lives take. Indeed, some of the most important determinants of life paths occur through the most trivial circumstances (Bandura, 1982; Merton & Barber, 2004). People are often initiated into new life trajectories, marital partnerships, and occupational careers through fortuitous circumstances. To cite an example, an academic publisher entered the lecture hall as it was rapidly filling up and seized an empty chair near the entrance. Some months later, he marries the woman who happened to be seated next to him. With only momentary change in time of entry, seating constellations would have altered and this intersection would not have occurred. A marital partnership was thus fortuitously formed at a talk devoted to fortuitous determinants of life paths! As this event illustrates, a seemingly insignificant fortuitous event can set in motion concatenating influences that change life courses, that cascade toward an outcome that could not have been anticipated.

Fortuitous intersects introduce probabilistic uncertainties that complicate long-range predictions of human behavior. The physical sciences acknowledge indeterminacy at the quantum mechanical level in the physical world. Fortuitous events introduce an element of indeterminacy in the behavioral sciences. However, the field of psychology avoids chance like the plague. We are in the business of explaining, predicting, and modifying behavior. Chance is a

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troublesome nuisance that is simply ignored. We need to bring science to bear on the fortuitous aspect of life.

Most fortuitous events leave people untouched, others have some lasting effects, and still others branch people into new trajectories of life. Psychology does not have much to say about the occurrence of fortuitous intersects except, at the population level, the types of settings in which one moves, and the types of people who populate those settings make some types of intersects more probable than others. Hanging out in a University library will spawn different intersects than hanging out with the Hell's Angels. However, psychology can provide the basis for predicting the nature, scope, and strength of impact fortuitous events will have on people's lives. In a first excursion into a predictive conceptual scheme (Bandura, 1982), social cognitive theory specifies how key personal attributes work in concert with inviting environmental properties to shape the course of events set in motion by fortuitous events.

Fortuitous events may be unforeseeable but fortuity does not mean uncontrollability of its effects. Paradoxically, people can bring personal influence to bear on the fortuitous character of life (Bandura, 1998). They can make chance happen by pursuing an active life that increases the number and type of fortuitous encounters they will experience. Chance favors the inquisitive and venturesome, who go places, do things, and explore new activities. People also make chance work for them by cultivating their interests, enabling beliefs and competencies. These personal resources enable them to make the most of opportunities that arise unexpectedly. Pasteur put it well when he noted, *"Chance favors only the prepared mind."* At a much earlier era, the philosopher Seneca, portrayed seeming serendipity as *"Luck is what happens when preparation meets opportunity."* The harder one works the luckier one gets. Even the distinguished lay philosopher, Groucho Marx, insightfully observed that people can influence how they play the hand fortuity deals them, *"You have to be in the right place at the right time, but when it comes, you better have something on the ball."* Personal development and engagement in a wide range of activities gives people a hand in shaping the courses their lives take.

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