CHAPTER 2

TOWARD AN AGENTIC THEORY OF THE SELF

Albert Bandura
Stanford University

The present chapter addresses the self from the agentic perspective of social cognitive theory. The conception of the self must be analyzed within the broader context of the model of human nature in which it is rooted. Our conceptions of human nature have changed markedly over time. In the early theological conceptions human nature was ordained by divine design. Evolutionism transformed the conception to one in which human nature is shaped by environmental pressures acting on random gene mutations and reproductive recombinations. This nonteleological process is devoid of deliberate plans or purposes.

The symbolic ability to comprehend, predict, and alter the course of events provides considerable functional advantages. The evolutionary emergence of language and abstract and deliberative cognitive capacities provided the neuronal structure for supplanting aimless environmental selection with cognitive agency. Human forebears evolved into a sentient agentic species. Their advanced symbolizing capacity enabled humans to transcend the dictates of their immediate environment. It made them unique in their power to shape their environment and the course of their lives. Through cognitive self-regulation, humans can visualize futures that act on the present; order preferences rooted in personal values; construct, evaluate, and

modify alternative courses of action; anticipate possible outcomes of the options considered; and override environmental influences.

CORE PROPERTIES OF HUMAN AGENCY

Social cognitive theory adopts an agentic perspective to the self. To be an agent is to influence intentionally one's functioning and life circumstances. There are four core properties of human agency. One such property is intentionality. People form intentions that include action plans and strategies for realizing them. Most human pursuits involve other participating agents, so there is no absolute agency. Collective endeavors require commitment to shared intentions and coordination of interdependent plans of action to realize them (Bratman, 1999). Members of families, educational systems, production crews, symphonic orchestras, athletic teams, and common everyday dyadic relationships have to negotiate and accommodate their self-interests to achieve unity of effort within diversity. Effective group performance is guided by collective intentionality.

The second property involves the temporal extension of agency through forethought. This includes more than future-directed plans. Individuals have to set themselves goals and anticipate likely outcomes of prospective actions to guide and motivate their efforts. A future state has no material existence so it cannot be a cause of current behavior acting purposively as an agent of its own realization. However, through cognitive representation visualized futures are brought into the present as current guides and motivators of behavior. In this form of temporally projected self-guidance, behavior is governed by visualized goals and anticipated outcomes not pulled by an unrealized future state acting on the present. When projected over a long time course, a forethoughtful perspective provides direction, coherence, and meaning to one's life.

The third agentic property is self-reactiveness. Agents are not only planners and forethinkers. They are also self-regulators. Having adopted an intention and action plan, one cannot simply sit back and wait for the appropriate performances to appear (Searle, 2003). Success requires a lot of self-regulative effort to translate vision into reality. In this process, individuals adopt personal standards, construct appropriate courses of action, monitor their activities, and regulate them by evaluative self-reactions. They do things that give them satisfaction and a sense of self-worth and refrain from actions that bring self-censure. Self-investment in the activity serves as a strong motivator.

The fourth agentic property is self-reflectiveness. People are not only agents of action. They are also self-examiners of their own functioning. Through functional self-awareness, they reflect on the meaning of their pursuits, their personal efficacy, and the soundness of their thoughts and

actions. The metacognitive ability to reflect upon oneself is the most distinctly human core property of agency.

Effective functioning requires reliable ways of distinguishing between accurate and faulty thinking. In verifying the adequacy of thought by self-reflective means, people generate ideas and act upon them or predict occurrences from them. They then judge from the results the accuracy and functional value of their thinking and try to improve it if necessary.

The process of thought verification involves comparing how well one's thoughts match some indicator of reality. There are four modes of thought verification: enactive, vicarious, persuasory, and logical. Enactive verification relies on the closeness of the fit between one's thoughts and the results of the actions they spawn. Good matches lend validity to the thoughts; mismatches challenge them. In the vicarious mode, seeing the effects of other people's actions provides the check on the correctness of one's outcome expectations. Vicarious thought verification is not simply a supplement to enactive validation. Symbolic modeling vastly expands the range of verification experiences that cannot be attained by personal action because of the constraints of time, resources, and mobility.

Some spheres of life involve highly specialized knowledge requiring dependence on experts, or metaphysical beliefs that are not amenable to empirical confirmation. When experiential verification is difficult or unfeasible, people evaluate the soundness of their views by checking them against the belief of others, such as experts or authoritative figures to whom they give credence. Thoughts are also verified by the rules of logical inference. In logical verification, people can check for fallacies in their thinking by deducing from knowledge that is known and what necessarily follows from it.

Such metacognitive activities usually foster dependable thought, but they can produce faulty thought patterns as well. Forceful actions arising from erroneous beliefs often create social environments that confirm the misbeliefs (Snyder, 1980). Verification of thought by comparison with distorted media versions of social reality can foster shared misconceptions of people, places, or things (Gerbner, Gross, Morgan, Signorielli, & Shanahan, 2002; Hawkins & Pingree, 1991). Social verification can foster bizarre views of reality if the shared beliefs of the reference group with which one affiliates are eccentric, and the group is encapsulated from outside social ties and corrective influences (Bandura, 1982). This is most strikingly illustrated in cultist beliefs (Hall, 1987). Similarly, deductive reasoning will be flawed if the propositional knowledge on which it is based is faulty or if biases intrude on reasoning processes (Falmagne, 1975).

Self-reflection extends beyond self-management of one's everyday activities. People reflect on the life they have led and the legacy they want to leave. In examining the life course they have traveled, they are more inclined to express regret for the actions not taken than for the actions tak-

en (Hathangadi, Medved, & Gilovich, 1995). They regret the educational opportunities forsaken, the careers not chosen that would have provided satisfaction and fulfillment, the risks not taken, and the relationships not cultivated or short-changed. In the words of the late Senator Tsongas, "No one on their death bed ever expressed regret for not spending more time in the office." The reach of work life has undergone transformative changes with the advent of wireless technologies. People are now wired to their workplace. The mobile office increasingly intrudes on family, social, and recreational life.

For life to be enduringly satisfying requires self-renewal for the transitional changes across the life course. When their worklife no longer commands their attention, people have to find new pursuits that give them a sense of purpose and satisfaction. With foreknowledge of their passing, people's self-reflection often turns to transcendental and spiritual issues.

ORIGINS OF PERSONAL AGENCY

The newborn arrives without any sense of selfhood and personal agency. It is socially constructed through transactions with the environment. The developmental progression of a sense of personal agency proceeds from perceiving causal relations between environmental events, through understanding causation via action, and finally to recognizing oneself as the agent of the actions. Infants exhibit sensitivity to causal relations between environmental events even in the first months of life (Lent, 1982; Mandler, 1992). They can begin to learn about action causation through repeated observation of contingent occurrences in which the actions of others make things happen. They see inanimate objects remain motionless unless manipulated by others (Mandler). Moreover, infants personally experience the effects of actions directed toward them, which adds salience to the causative functions of actions.

Recognition of action causation is socially enhanced by linking outcomes closely to infants' actions, by using aids to channel infants' attention to the outcomes they are producing, and by heightening the salience and functional value of the outcomes (Millar, 1972; Watson, 1979). However, development of a sense of personal agency requires more than simply producing effects by actions. Infants acquire a sense of personal agency when they recognize that they can make things happen, and they regard themselves as agents of those actions. This additional understanding of oneself as the doer extends the perception of agency from action causation to personal causation. The differentiation of one's own actions as distinct from those of others is the product of a more general process of the construction of an agentic self. Proprioceptive feedback from one's activities and self-referent

information from visual and other modalities in transactions with the environment aid in the early perception of an experiential person. Experienced effects resulting from self-directed actions further identify oneself as the recipient experiencing the effects. Thus, if touching a hot object brings pain, feeding oneself brings comfort, and entertaining oneself with manipulable objects generates enjoyment, such self-produced outcomes foster recognition of oneself as an agent. One becomes differentiated from others through rudimentary dissimilar experiences. If stubbing one's toe brings pain, but seeing others stub their toe brings no personal pain, one's own activity becomes distinguished from that of other persons.

The construction of personhood is not entirely a matter of private reflection on one's experiences. There is a social aspect to this process. As infants mature and acquire language, those around them refer to them by personal names and treat them as distinct persons. With the development of language, social self-referent labeling accelerates self-recognition and development of self-awareness of personal agency. By about 18 months, infants have self-referent verbal labels and apply them only to pictures of themselves (Lewis & Brooks-Gunn, 1979). They differentiate themselves from others in their verbal labeling. As they become increasingly aware that they can produce effects by their actions, by about 20 months, they spontaneously describe themselves as agents of their actions and their intentions as they engage in activities (Kagan, 1981). Before long, they begin to describe the psychological states accompanying their actions. Based on their growing personal and social experiences, they eventually form a symbolic representation of themselves as a distinct self capable of making things happen.

There is also a great deal of intentional guidance in fostering infants' agentic capabilities (Heckhausen, 1987; Karniol, 1989; Papousek & Papousek, 1979). Parents create highly noticeable proximal effects of infants' actions; for example, they provide them with objects within their manipulative capabilities to encourage production of effects by actions and segment activities into manageable subskills. They set challenges for their infants just beyond their existing competencies to enhance their personal development. They adjust their level of assistance across phases of mastery, offering explicit guidance in earlier phases of skill acquisition, but gradually withdrawing aid as infants become more competent in mastering tasks on their own. These types of enabling strategies are highly conducive to the development of a sense of personal agency during the initial years of life.

The self is the person, not a homunculan overseer that resides in a particular place and does the thinking and acting. Personhood embodies one's physical and psychosocial makeup with a personal identity and agentic capabilities that operate in concert through a variety of special-purpose biological systems. Although the brain plays a central role in psychological life, personhood does not reside solely in the brain, any more than the heart is

the sole place where circulation is located (Schechtman, 1997). For example, the musculature of a gymnast honed through countless hours of practice is part of the self but not solely of the brain. A transplant of the brain of an extraordinary gymnast into an octogenarian's body will not produce a sense of self as a dazzling gymnast—as a single organ view would imply.

PROLIFERATION OF SELVES

The field of personality has spawned a diverse taxonomy of selves with ambiguity about how they produce effects. There are no multiple, independent selves. Human behavior is socially situated, highly contextualized, and conditionally manifested. Adaptive functioning requires both appropriate generalization in the face of bewildering situational variation and perceptive discrimination to avoid dysfunctional overgeneralization. People, therefore, vary in their behavior conditional on circumstances that reflect the diverse aspects of their lives. They wrestle with conflicting goals and courses of action. But these are instances of the same being doing different things under different life conditions, not different selves doing their separate things.

Positing multiple selves plunges one into deep philosophical waters. It requires a regress of selves to a presiding superordinate self, who selects and manages the collection of selves, for selected purposes. Given but a single body, the choices finally made and the execution of a chosen course of action requires singleness of agency. The fragmentation of agency into multiple selves poses additional conceptual problems. Once you start fractionating the self where do you stop? For example, an athletic self can be split into an envisioned tennis self and a golfing self. These separable selves would, in turn, have their subselves. Thus, a golfing self can be subdivided into different facets of the athletic ability to include a driving self, a fairway self, a sand-trapped self, and a putting self.

There is only one personage who develops different sets of competencies for different life pursuits. Diversity of action arises not from a collection of agentive selves but from the different options pursued by the one and the same agentive self. Social cognitive theory also calls into question conceptions positing a duality of self as agent and as object in self-reflectivity. This seeming separation involves shifting the perspective of the same agent rather than partitioning a reified self. The shift in perspective does not transform one from an agent to an object. One is just as much an agent reflecting on oneself as in acting on the environment.

Sometimes the self is partitioned on the basis of envisioned quality of functioning, as when desired future selves are pitted against undesired future ones. Here, too, there is only one personage who can visualize differ-

ent desired and undesired futures and select courses of action designed to attain valued futures and escape devalued ones. At other times, the selves are partitioned based on other evaluative criteria, such as the actual self characterizing the current self-representation, the ideal self reflecting visionary aspirations, and the ought self rooted in social obligation and moral commitment. There has been some effort to identify the correlates of statistical discrepancies between particular types of selves. But no one has corralled the full set of selves to specify how they manage to work together in the regulation of human behavior. Actions are regulated by a person, not by a cluster of selves doing the choosing and guiding. The ontological and epistimenological status of multiform selves is rarely addressed. The postmodernists have a quite different version of the self. The postmodern self is not a property of the individual, but rather a plurality of social constructions, none of which has a unique claim to truth.

Rather than posit multiform selves, social cognitive theory conceptualizes the exercise of personal influence in terms of a self-representational system operating through self-regulatory processes. For example, the so-called aspirational ideal self and ought self are not different types of selves, but one and the same person applying different self-standards in idealized achievement and moral conduct. In development of competencies and aspirational pursuits, the self-regulatory standards selected as the sign of merit are progressively raised as knowledge and competencies are acquired and challenges are met. However, in many areas of social and moral behavior, the self-regulatory standards have greater stability. People do not change from week to week what they regard as right or wrong or good or bad. But in both achievement and moral domains, the process of turning self-standards into performance is much the same. It requires monitoring one's behavior, judging one's performance in relation to personal standards and situational circumstances, and reacting self-evaluatively to it.

In contrast to multiform selves doing their thing, an agentic self-representational model highlights the role played by self-standards, rooted in a value system; appraisal of personal capabilities for different pursuits; long-range aspirations merged with proximal subgoals that lead to their fulfillment; positive and negative outcome expectations for different life courses; the value placed on those envisioned outcomes; and the perceived environmental constraints and opportunity structures. These represent some of the influential sociocognitive determinants that shape the courses that lives take. One and the same person exercises these self-influences differentially in different activity domains, for different purposes, in different social contexts.

SELF-REPRESENTATION AND IDENTITY FORMATION

Identity formation is an important aspect of human agency. Personal identity refers to one's self-characterization. It affects how people structure their lives and relate to the everyday world around them. The psychological issues of interest in self-conception center on the organization and continuity of personal identity in the midst of notable changes over time and across different spheres of life. The transactions of everyday life also require a distinctive social identity that matters in how one is treated.

The exercise of agency through the interrelated self-representational structures and regulatory processes shapes the kind of life people live and what they consider themselves to be. The personal identity they create for themselves derives, in large part, from how they live their life and reflect upon it. The continuity of personal identity resides more in psychological factors and the experiential continuity of the course of life followed than in physical constancy. An amnesic remains the same physically but has lost a sense of personal identity. Continuing self-identity is preserved in memories that give temporal coherence to life (McAdams, 1996), in continuance of belief and value commitments that link the present to the past and shape the course of future events, and in the connectedness of human relationships and one's life work over time.

Our theories place heavy emphasis on phenomenological continuity. In social cognitive theory, personal identity is also rooted in agentic continuity. People not only construe themselves as a continuing person over different periods in their lives. As an agent, one creates identity connections over time (Karsgaard, 1996). Through their goals, aspirations, social commitments, and action plans, people project themselves into the future and shape the courses their lives take. In short, they agentically construct continuities.

Continuing self-identity is not solely a product of an intrapsychic autobiographical process that preserves a sense of personal continuity over time. Others perceive, socially label, and treat one as the same person over the course of life, even though they have undergone physical changes. Personal identity is partially constructed from one's social identity as reflected in how one is treated by significant others. In keeping with the model of triadic reciprocal determination, a sense of selfhood is the product of a complex interplay of social and personal construal processes. Others, of course, have only a limited sample of a given person's social life and know even much less of that individual's experiential life. Consequently, the social identity conveyed by others is more heavily dependent on the sameness of physical characteristics, social roles, and habitual behaviors that are publicly observable than on personal uniqueness and experiential factors.

Identity formation is an ongoing process, not one characterized by fixedness in time. Moreover, the self-representation is multifaceted rather than monolithic. Life is too heterogeneous for an undifferentiated personal identity. This complexity is reflected in the organization of the self-representation. There are many aspects to one's life. They are not equally salient, valued, or functional in different spheres of life or under different circumstances. In a dynamic, multifaceted model, continuity of personal identity requires neither high uniformity among different aspects of one's self-representation, nor invariance across different social environments or domains of functioning. For given individuals, their personal identity is likely to be composed of unique amalgams of identities with national, social, political, ethnic, occupational, and familial aspects of life depending on their value commitments. Thus, for a particular individual, a strong occupational identity may coexist with a moderate ethnic identity and a weak political identity without any felt discordance because these aspects differ in the value placed on them. Another individual, with different value commitments, may exhibit a dissimilar constellation of identity, combining a strong political and ethnic identity with a low national identity.

Similarly, a person's self view with parents may differ significantly from the self view in relationships with peers because these social worlds actualize different aspects of one's life. In each case, however, it is one and the same person manifesting a multifaceted personal identity. It is the temporal stability of the patterned self view rather than high uniformity across different spheres of life that defines one's personal uniqueness and sense of continuity. Theories that construe personal identity as a fixed monolith are discordant with a vast body of evidence.

With further experiences over time, people evolve and integrate some new aspects into their personal identity. This raises the issue of how they extract continuity from variability across time, activity domains, and social contexts. To the extent that they consider mainly core aspects or focus on different aspects of themselves as relevant in different life situations, they can change in particulars but preserve a sense of continuity in their view of themselves. However, if they undergo major life changes, they consider themselves to be different persons from whom they were in the past. Taken as a whole, research on the various personal properties subsumed under the spacious construct of "personality," attest to the explanatory, predictive, and operative efficacy of theories that specify multiform personal structures operating conditionally through self-regulatory mechanisms under the contextual influences in which people conduct their lives (Bandura, 1986; 1997). The oft-repeated query, "Where is the person in the personality theory?" is essentially a call for a homunculan self. Self-referent processes are embedded in a whole organism with the totality of

DUALITY OF INDIVIDUALISM AND COLLECTIVISM

A common duality inappropriately equates self-efficacy with self-centered individualism and pits it against collectivism (Schooler, 1990). Because efficacy beliefs involve self-referent processes, self-efficacy is often misconstrued as aggrandizement of an individualistic autonomous self and contrasted with a collectivistic self (Sampson, 1977). This duality is typically linked to variations in cultural systems. Dichotomous cultural groupings into individualistic and collectivistic types mask considerable diversity not only between cultural systems assigned to the same type but also within a particular culture.

Much of cultural psychology is based on territorial culturalism, in which nations are used as proxies for psychosocial orientations. For example, residents of Japan get categorized as collectivists and those in the United States as individualists. Collectivistic systems founded on Confucianism, Buddhism, and Marxism favor a communal ethic, but they differ significantly from each other in particular values, meanings, and the customs they promote (Kim, Triandis, Kâitçibasi, Choi, & Yoon, 1994). Nor are so-called individualistic cultures a uniform lot. Americans, Italians, Germans, French, and the British differ in their particular brands of individualism. Even within an individualistically oriented culture, such as the United States, the Northeast brand of individualism is quite different from the Midwest and West versions, and the latter differ from that of the Deep South region of the nation (Vandello & Cohen, 1999). Even the informativeness of regional comparisons is questionable because of a substantial ethnic heterogeneity within them. Cross-ethnic comparisons, such as *Latinos, African-Americans,* and *Asians,* can be highly misinformative because of the diverse nature of ethnicity. For example, to lump Puerto Ricans, Cubans, Chicanos, and Spanish, who have quite different cultural heritages and practices, into a Latino category imposes homogeneity on intra-ethnic diversity (Tienda & Mitchell, 2006). Hence, cultural contrasts, in which members of a single collectivist culture are compared to those of a single individualist one, can spawn misleading generalizations.

Cultures are diverse and dynamic social systems, not static monoliths. For example, there are generational and socioeconomic variations in communality in collectivistic cultures with younger and more affluent members adopting more individualistic orientations (Matsumoto, Kudoh, & Takeuchi, 1996). Analyses across activity domains and classes of social relationships further reveal that people behave communally in some aspects of their lives and individualistically in many other aspects (Matsumoto et al., 1996). For example, members of a collectivistically oriented society are communal with ingroup members such as family members, friends, and colleagues, but members of an individualistically oriented society are more

communal with outgroup members (Freeman & Bordia, 2001; Matsumoto et al., 1996). Indeed, variation in communal style of behavior across classes of relationships swamps variation across cultural milieus. Analyses across activity domains would undoubtedly reveal that people behave communally in some aspects of their lives and individualistically in many other aspects. Moreover, people express their cultural orientations conditionally rather than invariantly depending on incentive conditions (Yamagishi, 1988). Thus, members of a collectivistically oriented society are active contributors to collective effort with ingroup members, but slacken their effort in groups composed of outgroup members. But when negative sanctions are instituted against free riders, these individuals become as communal with outsiders as do people in individualistic cultures.

Cultural measures cast in terms of faceless others and disembodied from activity domains, social contexts, and incentive conditions mask the diversity on which human adaptation is conditional. Global, decontextualized measures shrink psychosocial variability to uniform polarity that tends to be ascribed to entire cultures and their residents. The multifaced variability underscores the conceptual and empirical problems of using nations as proxies for culture and then ascribing traits to the nations and its members as though they are static monoliths (Gjerde & Onishi, 2000). There is a substantial difference between theorizing based on categorical cultural trait ascriptions and process analyses. The intercultural and intracultural diversity described above requires analyses of psychosocial determinants and governing mechanisms grounded in a comprehensive theory of how people live their lives in given cultural milieus.

Not only are cultures not monolithic entities, but they are no longer insular. Global connectivity is shrinking cross-cultural uniqueness. Transnational interdependencies and global market forces are restructuring national economies and shaping the political and social life of societies. Advanced telecommunications technologies are disseminating ideas, values, and styles of behavior transnationally at an unprecedented rate. The symbolic environment, feeding off communication satellites, is altering national cultures and producing intercultural commonalities in some lifestyles. The growing role of electronic acculturation is fostering a more extensive globalization of culture. People worldwide are becoming increasingly enmeshed in a cyberworld that transcends time, distance, place, and national borders. In addition, mass migrations of people and high global mobility of entertainers, athletes, journalists, academics, and employees of multinational corporations are changing cultural landscapes. This intermixing creates new hybrid cultural forms, blending elements from different ethnicities. Growing ethnic diversity within societies accords functional value to bicultural efficacy to navigate the demands of both one's ethnic subculture and that of the larger society. These social forces are homogenizing some

aspects of life, polarizing other aspects, and fostering cultural hybridization (Holton, 2000). The new realities call for broadening the scope of cross-cultural research to analyses of how national and global forces interact to shape the nature of cultural life. As globalization reaches ever deeper into people's lives, a strong sense of collective efficacy to make transnational systems work for them, become critical to furthering their common interests and welfare.

One must distinguish between inherent capacities and how culture shapes these potentialities into diverse forms. For example, observational learning figures prominently in social cognitive theory. Humans have evolved an advanced capacity for observational learning (Bandura, 1986). It is essential for their self-development and functioning regardless of the culture in which they reside. Indeed, in many cultures, the word for *learning* is the word for *show* (Reichard, 1938). Modeling is a universalized human capacity. But what is modeled, how modeling influences are socially structured, and the purposes they serve varies in different cultural milieus (Bandura & Walters, 1963). Global applications of social cognitive theory to promote societywide changes attest to the power of social modeling in diverse cultural systems (Bandura, 2002, 2006; Rogers et al., 1999; Vaughan, Rogers, Singhal, & Swalehe, 2000).

Being immobilized by self-doubt about one's capabilities and belief in the futility of effort has little evolutionary 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 a collectivistically oriented one (Earley, 1993; 1994; Gibson, 1995). But how efficacy beliefs are developed and structured, the ways in which they are exercised, and the purposes to which they are put vary cross-culturally. Research testifies to the cross-cultural generalizability of self-efficacy theory. The factor structure of self-efficacy beliefs is essentially the same in different cultural systems (Pastorelli et al., 2001). Not only is the structure of self-efficacy beliefs comparable cross-culturally, but so is their functional properties. Regardless of whether the cultures are American, Italian, Korean, or Chinese, the stronger the perceived self-efficacy, the higher the performance attainments (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996; Bong, 2001; Joo, Bong, & Choi, 2000; Shih & Alexander, 2000). The cross-cultural comparability of function is evident as well in the impact of efficacy belief on perceived occupational efficacy and career choice and development (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001; Lent, Brown, & Larkin, 1987; Lent, Brown, Nota, & Soresi, 2003). Even the mechanisms through which self-efficacy beliefs affect performance are replicated cross-culturally (Bandura, 2002; Cheung & Sun, 2000; Lent et al., 2003; Park et al., 2000). The cross-cultural findings debunk the misconception that belief in one's efficacy is an egocentric orientation wedded to

Western individualism. Personal efficacy is valued, not because of reverence for individualism, but because a resilient sense of efficacy has generalized functional value regardless of whether activities are pursued individually or by people working together for common cause.

In sum, 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. Kluckhohn and Murray summarized eloquently the blend of universality, commonality, and uniqueness of human qualities: Every person is in certain aspects like all other people, like some other people, like no other person (as cited in Muñoz & Mendelson, 2005).

DUALITY OF AGENCY AND COMMUNION

The oft-cited duality between agency and communion is another questionable dichotomy (Bakan, 1966; Wiggins, 1991). In this duality, agency is characterized as the exercise of power and personal domination. Contrastingly, communion is said to foster prosocialness, friendship, caring, togetherness, and a sense of solidarity. Contrary to these differential attributed values—agency as self-centered and domineering and communion as socially bonding and nurturing—agency does not come with a built-in singular value system. As previously noted, nor does belief in one's efficacy, which subserves the exercise of agency, come with an engrafted egoistic value orientation.

Perceived self-efficacy comes in many forms that serve diverse purposes. Individuals with a high sense of social and empathic efficacy behave in caring, consoling, supportive, and cooperative ways (Bandura, Caprara, Barbanelli, Gerbino, & Pastorelli, 2003). A high sense of relational efficacy to promote harmonious relationships fosters prosocial styles of behavior (Kim & Park, 2006). Human agency is also conceptualized narrowly in the agency/communion dichotomy. As will be recalled from the earlier discussion, people have to rely on personal, proxy, and collective agency in managing their everyday lives. Each of these forms of agency can be exercised communally rather than just egocentrically.

People's life pursuits, goals, values, and aspirations influence the form their agency takes and the purposes their efficacy beliefs serve. In point of fact, personal efficacy can serve diverse purposes, many of which subordinate self-interest to the benefit of others. Gandhi provides a notable example of self-sacrifice in the exercise of unwavering self-efficacy for social change in the face of punitive institutional counteractions as he lived ascetically, not self-indulgently. Similarly, Nelson Mandella and Martin Luther King spurred extraordinary social changes that altered the course of socio-

political life in their societies in the face of daunting challenges through an enormously resilient sense of personal efficacy.

The exercise of self-efficacy in the service of prosocial and communal purposes is not confined to social reformers. In promoting their children's development, families living in dismal environments surmount adversities through resilient self-efficacy and considerable self-sacrifice. They do not let their inimical life conditions defeat them (Bandura, 1997; Furstenberg, Ecceles, Elder, Cook, & Sameroff, 1999). Without a resilient sense of efficacy, people are easily overwhelmed by adversities in attempts to change their lives for the better through collective effort.

DUALITY OF PERSONAL AGENCY AND SOCIAL STRUCTURE

Another disputable duality pits personal agency against social structure as rival determinants of behavior or as representing multilayered levels and proximity of causation. In the social cognitive theory of self and society, personal agency and social structure function interdependently rather than as disembodied entities (Bandura, 1986; 2001). Social systems are devised to organize, guide, and regulate human affairs in diverse spheres of life by authorized rules, sanctions, and enabling resources (Giddens, 1984). Social systems do not arise by immaculate conception. Social systems are the product of human activity. The authorized rules and practices of social systems, implemented by social agents, in turn, influence human development and functioning. However, in the dynamic interplay within the societal rule structures there is a lot of personal variation in the interpretation, adoption, enforcement, circumvention, and opposition to societal prescriptions and sanctions (Burns & Dietz, 1992). Given this dynamic bidirectionality of influence, social cognitive theory rejects a duality of human agency and a social structure as a reified entity disembodied from individuals.

A full understanding of human adaptation and change requires an integrated causal structure in which sociostructural influences operate through intrapersonal influences to produce behavioral effects. Indeed, empirical findings confirm that the impact of sociostructural influences on human functioning is, in large part, mediated through intrapersonal influences (Bandura et al., 1996; 2001; Caprara et al., 2007; Elder, 1995; Elder & Ardelt, 1992). However, in agentic transactions, the intrapersonal system is not merely a conduit for external influences. Personhood is socially constituted, but by exercising directive influence human agency operates proactively, not just reactively, in influencing social systems.,

PHYSICALISTIC THEORY OF HUMAN AGENCY

A theory of the self must address ontological and epistemological issues concerning its nature and how one comes to know it. The social cognitive theory of human agency is founded on nonreductive physicalism (Bandura, in press). It adopts ontological reductionism that mental events are physical states and processes not disembodied immaterial ones. However, it rejects epistemological reductionism that laws governing higher-level psychosocial phenomena are ultimately reducible to the laws operating at the atomic and molecular level. The mind is the embodiment of conscious cognitive states and processes rather than something existing apart from the brain. Cognitions are high-level cerebral events involving deliberative, reflective, referential, and evaluative processes. Nor is agency exercised through a hyphenated mind-body structure involving anatomically separate physical entities acting on each other in a Cartesian physicalism. Rather, it involves highly interconnected brain systems serving different functions subject to higher-level control operating within the same material entity.

Physicality in the ontological sense does not mean reduction of psychology to biology, chemistry, or physics. Each level of phenomena—physical, chemical, biological, psychological, sociostructural—involves emergent new properties that are distinct to that level and must be explained by laws in its own right. Knowing where things happen in the brain does not tell you how to make them happen. For example, knowledge of the locality and brain circuitry subserving learning can say little about how best to devise conditions of learning in terms of level of abstractness, novelty and challenge; how to get people to attend to process and organize relevant information; and whether learning is better achieved independently, cooperatively, or competitively. These factors have no conceptual counterpart in neurobiological theory, and therefore, they are not derivable from it. The optimal learning conditions must be specified by psychological principles. A full explanation of human learning must, therefore, encompass both the psychosocial principles and the subserving neurobiological principles.

System-level emergence calls for theoretical plurality across physical, chemical, biological, psychological, and social structural levels of functioning with linkage between them rather than reducibility to a single superseding theory. Neither subatomic particles nor neuronal cells can tell us how to develop efficacious parents, teachers, executives, or tenacious social reformers as this requires a psychological level theory.

SECOND-ORDER CONTROL
OF NEUROPHYSIOLOGICAL PROCESSES

Agentic contributions to human functioning are dismissed in some quarters on the grounds that human behavior is regulated by intricate neural networks that operate outside of one's awareness and control. Hence, thoughts are epiphenominal events that create an illusion of control but actually have no effect on how one behaves. This is a highly truncated view of how humans exercise control. It strips humans of agentic capabilities, a functional consciousness, and a personal identity. It is not individuals but their subpersonal parts that are orchestrating activities nonconsciously. A detailed critique of this view and the evidence that proponents cite in support of it is presented by Bandura (in press). elsewhere (Bandura, in press).

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 be functionally related to given outcomes. In pursuing these activities, over which they can exercise control, they shape the functional structure and enlist the subpersonal neurophysiological events. For purposes of illustration, consider the following analogy. In driving an automobile, the driver engages in coordinated acts of shifting gears, steering, manipulating the gas pedal, and applying brakes. The assemblage of auto subsystems provides the intricate operational mechanisms but they require distinctive higher-order activation and regulation. The acts of driving, 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, steering, 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 far in advance requires considerable proactive top-down cognitive regulation. The temporal structuring of behavior sets the course for one's activities. Proximal self-regulation provides the guides, strategies, and motivators in the here and now to get to where one is going (Bandura, 1991). Having constructed a vacation plan, travelers cannot sit back and wait for lower-level sensory-motor activity to consummate the vacation arrangements unconsciously.

Consider the second-order control over the intricate neurophysiological machinery. Individuals obviously do not intentionally direct their atrial and ventricular cardiac muscle fibers to fire and their aortic and pulmonary valves to open and close. However, by intentionally engaging in an exercise routine and controlling their activity level, they can enhance their cardiac function and regulate their heart rate without having the foggiest idea of how they indirectly recruited, by their intentional actions, the subserving

neurophysiological mechanisms. They can also intentionally speed up and slow down their heart rate by generating frightening and tranquilizing thoughts. In short, enactments of functional activities at the controllable macrobehavioral level serve as the means for agentic recruitment of the subserving brain mechanisms at the microneural level. Framing the issue of conscious cognitive regulation in terms of direct control over the neurophysiological mechanics of action production spawns unenlightening debates at the wrong level of control.

Much of the psychological theorizing and research are devoted to verifying functional relations between actions and outcomes and the governing sociocognitive processes. Because individuals have no awareness of their brain processes does not mean that they are just quiescent hosts of automata that dictate their behavior. Neuroimaging can shed light on the neural mechanisms of cognitive control and how controllable agentic action indirectly develops functional neuronal structures and orchestrates the neurodynamics for selected purposes. Neuroscience is moving beyond expunging an autonomous homunculus to research that advances understanding of the nature and function of higher level cognitive control and the role played by self-referent processes in human functioning (Becchio, Adenzato, & Bara, 2005; Gusnard, 2005; Hochberg et al., 2006; Miller & Cohen, 2001). There is a difference between a reified self lodged in a control center and a self-representational system that comprises functional properties developed through extensive learning and socialization experiences. These include, among other properties, a personal identity, appraisal of personal capabilities, goals linked to values that give purpose and direction to one's activities, discerned conditional relations that permit forethoughtful actions, and self-reactive capabilities rooted in personal standards of merit, responsibility, and morality. Life experiences are processed through this self-referential context rather than processed impartially as though one was devoid of any personal investment.

People are contributors to their activities, not just onlooking hosts of subpersonal networks autonomously creating and regulating their performances. People conceive of ends and work purposefully to achieve them. They are agents of experiences, not just undergoers of experiences. In their transactions with their environment, cognitive agents are generative, creative, proactive, and reflective, not just reactive to external input. The sensory, motor, and cerebral systems are tools people use to accomplish the tasks and goals that give meaning, direction, and satisfaction to their lives (Bandura, 1997; Harré & Gillet, 1994). These tools do not come fully prestructured for complex skills. An aspiring violinist, for example, has to practice tenaciously to train the brain, build muscular strength and dexterity, and hone sensory acuity to realize a virtuoso performance. The remarkably versatile brain has to be trained to execute the pyrotechnical wizardry of a

Paganini violin concerto. There is much excitement about how the brain regulates behavior to the neglect of how individuals train the brain to serve desired purposes.

ROLE PLAYED BY INTRAPERSONAL INFLUENCES IN TRIADIC RECIPROCAL CAUSATION

A theory of the self must specify how personal determinants operate in causal structures. Over the years, theorists engaged in fruitless debates on whether the causes of human behavior reside in the environment as the situationists claim, or in the individual as the dispositionalists claim. Nowadays, almost everyone adopts an interactionist model of causation. In this view, human functioning is a product of the interaction between personal and environmental influences. But there are three types of interactionism, two of which subscribe to one-way causation in the link to behavior (Figure 2.1).
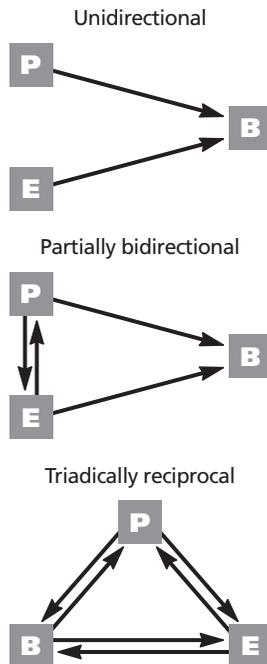

Figure 2.1   Schematization of the interplay of constituent determinants in alternative interactional causal models. *P* represents the intrapersonal determinants in the form of cognitive, motivational, affective, and biological events; *B* the behavioral determinants; and *E* the environmental determinants.

In the unidirectional model, persons and situations are treated as independent influences that combine in unspecified ways to produce behavior. The major weakness with this causal model is that personal and environmental influences do not function as independent determinants. They affect each other. People create, alter, and destroy environments. The changes they produce in environmental conditions, in turn, affect them personally. The causally unidirectional relation to behavior is another serious deficiency of this model of interactionism.

The partially bidirectional conception of interaction, which is widely adopted in personality theory, acknowledges that persons and situations affect each other, but still treats influences relating to behavior as flowing in only one direction. The person-situation interchange unidirectionally produces behavior, but the behavior itself does not affect the ongoing transaction between the person and the situation. A major limitation of this causal model is that behavior is not procreated by an intimate interchange between a behaviorless person and the environment. Such a feat would be analogous to immaculate conception. Except through their social stimulus value, people cannot affect their environment, other than by their actions. Behavior is an interacting determinant rather than a detached by-product of a behaviorless person-situation interchange.

The partially bidirectional model of interactionism is typically evaluated by partitioning the average amount of variance in behavior attributed to persons, environments, and their interaction. In this conception, the interactional form is statistical, not an interdependently dynamic one in the causal structure. The statistical partitioning reminds one of the non-swimming statistician who drowned in deciding to cross a river that averaged 2 feet in depth.

Social cognitive theory conceptualizes the interactional causal structure as triadic reciprocal causation. In this conception, human functioning is a product of a reciprocal interplay of intrapersonal, behavioral, and environmental determinants. In the analytic decomposition of triadic determination, different subspecialties of psychology have centered their inquiry on particular segments of the reciprocal interplay. In the reciprocative relation between intrapersonal and behavioral determinants, people's biological endowments, conceptions, values, goals, and affective states influence how they behave. The natural and extrinsic effects of their actions, in turn, affect their thought processes and affective states. In the reciprocative relation between behavioral and environmental determinants, behavior alters environmental conditions and it is, in turn, altered by the very conditions it creates. In the reciprocative relation between intrapersonal and environmental determinants, social influences in the form of social modeling, instructional practices, and various modes of social persuasion alter personal attributes. In the reciprocal impact of this segment, people can affect their

environment without saying or doing anything. They elicit reactions from the social environment simply by their physical characteristics, such as their ethnicity, gender, race, age, physical attractiveness, and their socially conferred roles and statuses. The social reactions thus elicited, in turn, affect the recipients' conceptions of themselves and others in ways that either strengthen or reduce the environmental bias.

A comment is in order concerning the nature of the environment and the practice of partitioning the average amount of variance in behavior accounted for persons and environment as though they were fixed entities. Social cognitive theory distinguishes among three different types of environments: those that are imposed, selected, and created. The imposed physical and sociostructural environment impinges on people whether they like it or not. They have little control over its presence, but they have some latitude in how they construe it and react to it. However, for the most part, the environment is only a potentiality that does not come into being until it is selected and activated by appropriate action. This constitutes the selected environment. Under the same potential environment some people take advantage of the opportunities it provides and its rewarding aspects. Others get themselves enmeshed mainly in its punishing and debilitating aspects. In the created environment, people construct physical and social environments that enable them to exercise greater control over their lives and to realize desired futures. Gradations of environmental controllability require increasing levels of personal agency.

Most human commerce with the environment is socially situated in interpersonal transactions. In an interpersonal transaction, individuals are each other's environments. Consequently, the status of psychological constructs changes in the flow of social embeddedness. Person A becomes the agent acting on the environment (person B) if one enters the transactional analysis on the A side. But person B's status changes from an environment to an agent acting on the environment (person A) if one enters on the B side one step later in the ongoing transaction. Thus, the same event can change from an agentic influence to a behavioral expression, and to an environmental outcome, depending arbitrarily on different entry points in the ongoing transaction between the individuals involved. Thus, in the transactions of everyday life, one cannot speak of *environment, behavior,* and *outcomes* as though they were fundamentally different events with distinct inherent features.

The exercise of human agency raises the issue of freedom and determinism. Humans are not just reactive to external input in a preprogrammed robotic way. As noted in the functional properties of human agency and the triadic codetermination, intrapersonal influences are significant contributors to the course of events. Within the triadic codetermination, deliberative thought not only alters the relation between environmental influences

and behavioral outcomes, but fosters courses of action that proactively shape the physical and social environments. When viewed from a social cognitive perspective, freedom is not conceived just passively as the absence of constraints and coercion in choice of action, but proactively as the exercise of self-influence in the service of selected goals and desired outcomes. Because the exercise of personal influence is an interesting part of the determining conditions in the triadic interplay, the notion that people are coauthors of their destiny is compatible with the doctrine of one's actions being determined.

The cultivation of agentic capabilities adds concrete substance to abstract metaphysical discourses about freedom and determinism. People who develop their competencies, self-regulatory skills, and enabling beliefs in their efficacy can generate a wider array of options that expand their freedom of action (Bandura, 1986; 1997). They are also more successful in realizing desired futures than those with less developed agentic resources.

AGENTIC MANAGEMENT OF FORTUITY

There is much that people do designedly to exercise some control over their personal 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 of circumstances. People are often inaugurated into new life trajectories, marital partnerships, and occupational careers through fortuitous circumstances (Austin, 1978; Bandura, 1986; Stagner, 1981). In their insightful volume on *The Travel and Adventures of Serendipity*, Merton and Barber (2004) document the workings of fortuitous events in life trajectories.

A fortuitous event in social encounters is an unintended meeting of persons unfamiliar with each other. The separate paths have their own determinants, but they are causally unconnected until their intersection. At that point, the encounter creates a unique confluence of influences that can alter life courses (Nagel, 1961). Consider an example of a fortuitous event at an address on the psychology of chance encounters that altered the course of lives (Bandura, 1982). An academic publisher entered a lecture hall as it is rapidly filling up and seized an empty chair near the entrance. He ended up marrying the woman who happened to be seated next to him. With only a momentary change in time of entry, seating constellations would have altered, and their lives would have taken quite different courses. A marital partnership was formed fortuitously at a talk devoted to fortuitous determinants of life paths!

A seemingly insignificant fortuitous event can set in motion constellations of influences that change life courses. These branching processes

alter the continuity and linear progression of life-course trajectories. The profusion of separate chains of events in everyday life provides myriad opportunities for such fortuitous intersects. Even if one knew all the determinate conditions for particular individuals, one cannot know in advance the intersection of unconnected events. 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. Fortuitous intersects introduce probabilistic uncertainties that complicate long-range predictions of human behavior.

Most fortuitous events leave people untouched, others have some lasting effects, and still others branch people into new trajectories of life. A science of psychology does not have much to say about the occurrence of fortuitous intersects, except that personal proclivities, 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. For example, engrossment in life of the Hells Angels would doubtless produce different fortuitous intersects than would engrossment in a college's academic life.

Fortuitous occurrences may be unforeseeable, but having occurred, the conditions they create operate as contributing factors in causal processes in the same way as do prearranged ones. Hence, psychology can advance knowledge on the effects of fortuitous events on life paths. Several lines of evidence identify personal attributes and the properties of the environments into which individuals are fortuitously inaugurated as predictors of the nature, scope, and strength of the impact that such encounters are likely to have on personal lives (Bandura, 1982, 1986).

Fortuity does not mean uncontrollability of its effects. People can bring some influence to bear on the fortuitous character of life. They can make chance happen by pursuing an active life that increases the number and type of fortuitous encounters they will experience (Austin, 1978). 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 (Bandura, 1998). These personal resources enable them to make the most of opportunities that arise unexpectedly. Pasteur put it well when he noted that, "Chance favors only the prepared mind." Even that distinguished lay philosopher, Groucho Marx, insightfully observed that people can influence how they play the hand that 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 gives people a hand in shaping the courses their lives take. These various proactive activities illustrate the agentic management even of fortuity.

FOUNDATION OF HUMAN AGENCY

As previously noted, belief in one's efficacy is a key agentic resource in personal development, successful adaptation and change. This core belief operates through its impact on cognitive, motivational, affective, and decisional processes (Bandura, 1997). Efficacy beliefs affect whether individuals think optimistically or pessimistically, in self-enhancing or self-debilitating ways. Such beliefs affect people's goals and aspirations, how well they motivate themselves, and their perseverance in the face of difficulties and adversity. Efficacy beliefs also shape people's outcome expectations—whether they expect their efforts to produce favorable outcomes or adverse ones. In addition, efficacy beliefs determine how opportunities and impediments are viewed. People of low efficacy are easily convinced of the futility of effort in the face of difficulties, and they quickly give up trying. Those of high efficacy view impediments as surmountable by development of one's competencies and perseverant effort. They stay the course in the face of difficulties and remain resilient to adversity. Moreover, efficacy beliefs affect the quality of emotional life and vulnerability to stress and depression. Last, but not least, efficacy beliefs determine the choices people make at important decisional points. A factor that influences choice behavior can profoundly affect the courses lives take. This is because the social influences operating in the selected environments continue to promote certain competencies, values, and lifestyles.

Many meta-analyses have been conducted across diverse spheres of functioning in both laboratory and field studies with diverse populations of varying ages and sociodemographic characteristics and in different cultural milieus (Boyer et al., 2000; Holden, Moncher, Schinke, & Barker, 1990; Moritz, Feltz, Fahbach & Mack, 2000; Multon, Brown, & Lent, 1991; Sadri & Robertson, 1993; Stajkovic & Luthans, 1998.). The evidence from these meta-analyses show that efficacy beliefs contribute significantly to level of motivation, emotional well-being, and performance accomplishments.

One cannot be all things. Such almightiness would require a gigantic amount of time, resources, and effort to master every realm of human activity. Hence, people differ both in the areas in which they cultivate their efficacy and in the levels to which they develop it even within their chosen pursuits. Social cognitive theory treats the efficacy belief system not as an omnibus trait but as a differentiated set of self-beliefs linked to distinct realms of functioning.

The specialized complexities of contemporary societies require diversity in self-efficacy to enable people to master and manage different types of pursuits. Some develop their self-efficacy to become chefs, others to fly airplanes, play the tuba, service automobiles, provide medical services, educate students, perform religious services, or cultivate the land. Within these

diverse pursuits, some members aim for the top and labor arduously to get there. Most are content with a sufficing self-efficacy. They are overjoyed at breaking a golf score of 100 rather than strive for the professional ranks. Self-efficacy theory embraces the French dictum: Viva la différence. Interpersonal diversity in self-efficacy complements and enriches our lives.

GENETIZATION OF HUMAN BEHAVIOR

We are currently witnessing an extensive genetization of human behavior. Social roles and human practices are increasingly being proclaimed as driven by the inertia of primeval biological programming. Not all evolutionary theorists speak with one voice, however. Psychological evolutionists often take a more extreme deterministic stance regarding the rule of nature (Buss, 1995; Archer, 1996) than do many biological evolutionists (Dobzhansky, 1972; Fausto-Sterling, 1992; Gould, 1987; Gowaty, 1997). A critique of psychological evolutionism has been addressed elsewhere and will not be reviewed here (Bussey & Bandura, 1999).

Biological evolutionists emphasize functional relations between organisms and local environmental conditions that underscore the diversifying selection influence of variant ecological niches. Cultures evolve over generations and shape the ways people need to live to make it in the particular cultural milieu in which they are immersed (Boyd & Richerson, 1985; 2005). As Boyd notes, humans evolved in the tropics but hunt seals in the Arctic. Genes did not teach them how to build a kayak, their culture did.

Biology provides the information-processing mechanisms and potentialities and sets constraints, but in most spheres of functioning biology permits a broad range of cultural possibilities. As Gould (1987) notes, the major explanatory dispute is not between nature and nurture as the issue is commonly framed. Rather, the issue in contention is whether nature operates as a determinist that has culture on a "tight leash" as Wilson (1988) contends, or as a potentialist, that has culture on a "loose leash" as Gould (1987) maintains.

Humans have created societies of diverse natures: aggressive and pacific ones, egalitarian and despotic ones, altruistic and selfish ones, individualistic and collectivistic ones; and enlightened and backward ones. Evidence supports the potentialist view. For example, people possess the biological capability for aggressive acts but cultures differ markedly in aggressiveness (Alland, 1972; Gardner & Heider, 1969; Levy, 1969). There are also wide differences in aggression within the same culture (Bandura, 1973). Even entire nations, such as Sweden and Switzerland, have transformed from warring societies to pacific ones. The Swiss used to be the main suppliers of mercenary fighters in Europe. As they transformed into a pacific soci-

ety their militaristic vestige is evident only in the plumage of the Vatican guards. For ages the Vikings plundered other nations. Their ruthlessness was captured in the prayer, "Deliver us, O Lord, from the fury of the Norsemen." After a prolonged war with Russia, the populace rose up and forced a constitutional change (Moerk, 1995). It prohibited kings from starting wars. This political act promptly transformed a warring society into a peaceful one. In addition, Sweden is now a mediator for peace among warring nations. Cultural diversity and the rapid transformative societal changes underscore that the answer to human aggression lies more in ideology than in biology.

Biological determinists support a conservative view of society that emphasizes the rule of nature, inherent constraints, and limitations. They contend that people should not try to remake themselves and their societies against the rule of nature, however the determinists construe it. Biological potentialists give greater weight to enabling social conditions that promote personal development and societal change. They emphasize human possibilities and how to realize them. People have changed little genetically over the past millennium, but they have changed markedly over the recent decades in their beliefs, mores, social roles, cohabiting arrangements, family practices, and styles of behavior in diverse spheres of life. They have done so through rapid cultural and technological evolution.

GROWING PRIMACY OF HUMAN AGENCY IN THE COEVOLUTION PROCESS

Dobzhansky (1972) reminded us that humans are a generalist species that was selected for learnability and plasticity of behavior, not for behavioral fixedness. Although not limitless, changeability and agentic capability are the hallmarks of human nature. Because of limited innate programming humans require a prolonged period of development to master essential competencies. Moreover, different periods of life present new competency demands requiring self-renewal over the life course to meet the challenges of changing norms and life circumstances. Adding to the necessity of changeability, the eras in which people live usher in technological innovations, shifts in socioeconomic conditions, cultural upheavals, devastating wars, and political changes that make life markedly different, calling for new adaptations (Elder, 1994). These diverse adaptational changes are cultivated by agentic psychosocial means.

People are not just reactive products of selection pressures served up by a one-sided evolutionism. They are prime players in the coevolution process. Other species are heavily innately programmed as specialists for stereotypic survival in a particular habitat. In contrast, through agentic action,

people devise ways of adapting flexibly to remarkably diverse geographic, climatic, and social environments. They devise ways to transcend their biological limitations. For example, humans have not evolved morphologically to fly, but they are soaring through the air and even in the rarified atmosphere of outer space at breakneck speeds despite the inborn constraint. Agentic inventiveness transcended genes and biological design in getting them airborne.

People use their ingenuity to circumvent and insulate themselves from selection pressures. They create devices that compensate immensely for their sensory and physical limitations. They construct complex environments to fit their desires, many of which are fads and fashions that are socially constructed by vigorous marketing practices. They create intricate styles of behavior necessary to thrive in complex social systems. Through social modeling and other forms of social guidance they pass on to subsequent generations accumulated knowledge and effective practices. They transcend time, place, and distance, as they interact globally with the symbolic environment of the cyberworld.

Through contraceptive ingenuity, that disconnected sex from procreation, humans have outwitted and taken over control of their evolved reproductive system. They seek sex without procreation rather than strive to propagate their kind in large numbers. They are developing reproductive technologies to separate sex even from fertilization. Through genetic engineering, humans are creating biological natures, for better or for worse, rather than waiting for the slow process of natural evolution. They are now changing the genetic make-up of plants and animals. Unique native plants that have evolved over eons are disappearing as commercial horticulturalists are supplanting them with genetically uniform hybrids and clones. Humans are not only cutting and splicing nature's genetic material, but, through synthetic biology, they are creating new types of genomes. Humans are even toying with the prospect of fashioning some aspects of their own biological nature by genetic design.

As testified by the diverse modes of behavioral control, the psychosocial side of coevolution is gaining ascendancy through the agentic power to transform environments and what humans become. In short, we are an agentic species that can alter evolutionary heritages and shape the future. What is technologically possible is likely to be attempted by someone. We face the prospect of increasing effort at direct social construction of our biological nature through genetic design. These developments present an enormous challenge on how to bridle unbounded genetic manipulation (Baylis & Robert, 2004). The values to which people subscribe and the social systems they devise to oversee the uses to which their technological power is put will play a vital role in what people become and how they shape their destiny.

Were Darwin writing today, he would be documenting the overwhelming human domination of the environment. Many of the species in our degrading planet have no evolutionary future. We are wiping them out and the ecosystems that support life at an accelerating pace. Unlike former mass extinctions by meteoric disasters, the current mass extinction of species is the product of human behavior. As the unrivaled ruling species atop the food chain, we are drafting the requiem for biodiversity. By wielding powerful technologies that amplify control over the environment, humans are producing hazardous global changes of huge magnitude—deforestation, advancing desertification, global warming, raising sea levels by ice-cap and glacial melting, topsoil erosion and sinking water tables in the major food-producing regions, depletion of fisheries, and degradation of other aspects of the earth's life support systems. Through collective practices driven by a foreshortened perspective, humans may be well on the road to outsmart themselves into irreversible ecological crises.

The creative power of human agency generally gets downgraded in evolutionary accounts of human behavior, especially in the more biologically deterministic views propounded in psychological evolutionism. The notion in vogue is that biological evolution provides the potential and culture can do only so much within its constraints. This view flies in the face of the growing primacy of human agency in the coevolution process in modifying endowed heritages and creative circumventing of endowed limitations. It is not that social cognitive theory dismisses biology. Quite the contrary. People have evolved the biological capacity for the very agentic attributes that are distinctly human. These include deliberative and generative thought, forethoughtful self-regulation, and reflective self-evaluation. Neither the agentic human ascendancy in the coevolution process nor the rapid transformational societal changes would be possible without the biological endowment of abstract cognitive capabilities. Moose are not splicing genes, building space ships, or creating atomic bombs that can render this battered planet uninhabitable. Humans are doing so through the use of their advanced biological endowment.

Social cognitive theory highlights the forward-looking impact of our biological endowment, rather than backward-looking speculation about adaptation to primitive conditions of prehistoric times. The study of how humans are changing endowed heritages, circumventing biological constraints, and shaping their future through social and technological evolution is more fruitful than spinning fanciful stories about prehistoric mating patterns in drafty caves.

CONCLUDING REMARKS

Self theories must address their ontological and epistemological stance. In some philosophical and neuroscientific circles, the self is being unceremoniously expunged as an internal homunculus. In this view, intrapersonal influences, subsumed under the umbrella label of the self, are construed as epiphenomena of low-level neural activity operating beyond one's awareness or control.

The conception of the self within the agentic framework of social cognitive theory is founded on nonreductive physicalism. The self is the person, not a distinct entity that is the bearer of information and regulator of behavior. The advanced symbolizing capacity, neuronally distributed and richly interconnected to diverse sensory and motor systems, provides humans with the means to function as mindful agents. In acting as agents, individuals exercise second-order control over their neurophysiological machinery. By pursuing activities at the macrobehavioral level, over which they exercise direct control, individuals shape their functional neuronal structure and recruit the subserving neurophysiological mechanisms at the microneural level.

Social cognitive theory subscribes to a causal structure grounded in triadic reciprocal determination. In this triadic codetermination, human functioning is the product of a reciprocal interplay of intrapersonal, behavioral, and environmental influences. Because intrapersonal influences are part of the determining conditions, people have a hand in shaping the course of events that affect their lives. Intrapersonal influences are not just filters or organizers of environmental inputs. Individuals are proactive agents who create and modify social and physical environments. They do so through the exercise of individual, proxy, and collective agency. Social cognitive theory takes an optimistic view of people's capability, enacted both individually and collectively, to shape their destiny. Their value commitments guiding the exercise of this capability will determine, in large part, the course their lives take.

NOTE

Some sections of this chapter include material from Bandura, A. *Self-efficacy: The exercise of control.* New York: Freeman, and Bandura, A. (2006). Toward a psychology of human agency. *Perspectives on Psychological Science, 1,* 164–180.

REFERENCES

Alland, Jr., A. (1972). *The human imperative.* New York: Columbia University Press.

Archer, J. (1996). Sex differences in social behavior: Are the social role and evolutionary explanations compatible? *American Psychologist, 51,* 909–917.

Austin, J. H. (1978). *Chase, chance, and creativity: The lucky art of novelty.* New York: Columbia University Press

Bakan, D. (1966). The duality of human existence: Isolation and communion in Western man. Boston: Beacon Press.

Baltes, M. M. (1996). *The many faces of dependency in old age.* New York: Cambridge University Press.

Bandura, A. (1973). *Aggression: A social learning analysis.* Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (1982). The psychology of chance encounters and life paths. *American Psychologist, 37,* 747–755.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (1991). Self-regulation of motivation through anticipatory and self-reactive mechanisms. In R. A. Dienstbier (Ed.), *Perspectives on motivation: Nebraska symposium on motivation* (Vol. 38, pp. 69–164). Lincoln: University of Nebraska Press.

Bandura, A. (1997). *Self-efficacy: The exercise of control.* New York: Freeman.

Bandura, A. (1998). Exploration of fortuitous determinants of life paths. *Psychological Inquiry, 9,* 95–99.

Bandura, A. (2000). Exercise of human agency through collective efficacy. *Current Directions in Psychological Science, 9,* 75–78.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology, 52,* 1–26.

Bandura, A. (2002). Social cognitive theory in cultural context. *Journal of Applied Psychology: An International Review, 51,* 269–290.

Bandura, A. (2006). Going global with social cognitive theory: From prospect to paydirt. In S. I. Donaldson, D. E. Berger & K. Pezdek (Eds.), *Applied psychology: New frontiers and rewarding careers* (pp. 53–79). Mahwah, NJ: Erlbaum.

Bandura, A. (in press). The reconstrual of "free will" from the agentic perspective of social cognitive theory. In J. Baer, J. C. Kaufman, & R. F. Baumeister (Eds.), *Psychology and free will.* Oxford: Oxford University Press.

Bandura, A., Barbaranelli, C., Caprara, G.V., & Pastorelli, C. (1996). Multifaceted impact of self-efficacy beliefs on academic functioning. *Child Development, 67,* 1206–1222.

Bandura, A., Barbaranelli, C., Caprara, G. V., & Pastorelli, C. (2001). Self-efficacy beliefs as shapers of children's aspirations and career trajectories. *Child Development, 72,* 187–206.

Bandura, A., Caprara, G. V., Barbaranelli, C., Gerbino, M. G., & Pastorelli, C. (2003). Role of affective self-regulatory efficacy in diverse spheres of psychosocial functioning. *Child Development, 74,* 769–782

Bandura, A., & Walters, R. H. (1963). *Social learning and personality development.* New York: Holt, Rinehart & Winston.

Baylis, F., & Robert, J. (2004). The inevitability of genetic enhancement technologies. *Bioethics, 18,* 1–26.

Beccio, C., Adenzato, M., & Bara, B. (2005). How the brain understands intention: Different neural circuits identify the componential features of motor and prior intentions. *Consciousness and Cognition, 15,* 64–74.

Bong, M. (2001). Between- and within-domain relations of academic motivation among middle and high school students: Self-efficacy, task-value, and achievement goals. *Journal of Educational Psychology, 93,* 23–34.

Boyd, R., & Richerson, P. J. (1985). *Mechanisms of cultural evolution.* Chicago: University of Chicago Press.

Boyd, R., & Richerson, P. J. (2005). *Not by genes alone: How culture transformed human evolution.* Chicago: University of Chicago Press.

Boyer, D. A., Zollo, J. S., Thompson, C. M., Vancouver, J. B., Shewring, K., & Sims, E. (2000, June). A quantitative review of the effects of manipulated self-efficacy on performance. Poster session presented at the annual meeting of the American Psychological Society, Miami, FL.

Brandtstädter, J., & Baltes-Gotz, B. (1990). Personal control over development and quality of life perspectives in adulthood. In P. B. Baltes & M. M. Baltes (Eds.), *Successful aging: Perspectives from the behavioral sciences* (pp. 197–224). Cambridge: Cambridge University Press.

Bratman, M. E. (1999). *Faces of intention: Selected essays on intention and agency.* New York: Cambridge University Press.

Burns, T. R., & Dietz, T. (1992). Cultural evolution: Social rule systems, selection and human agency. *International Sociology, 7,* 259–283.

Buss, D. (1995). Psychological sex differences: Origins through sexual selection. *American Psychologist, 50,* 164–168.

Bussey, K., & Bandura, A. (1999). Social cognitive theory of gender development and differentiation. *Psychological Review, 106,* 676–713.

Caprara, G. V., Fida, A., Vecchionem, M., Del Bove, G., Vecchio, G. M., Barbaranelli, C., et al. (In press) Longitudinal analysis of the role of perceived efficacy for self-regulated learning in academic continuance and achievement. *Educational Research Journal.*

Cheung, S., & Sun, S. Y. K. (2000). Effects of self-efficacy and social support on the mental health conditions of mutual-aid organization members. *Social Behavior and Personality, 28,* 413–422.

Dobzhansky, T. (1972). Genetics and the diversity of behavior. *American Psychologist, 27,* 523–530.

Earley, P. C. (1993). East meets West meets Mideast: Further explorations of collectivistic and individualistic work groups. *Academy of Management Journal, 36,* 319–334

Earley, P. C. (1994). Self or group? Cultural effects of training on self-efficacy and performance. *Administrative Science Quarterly, 39,* 89–117.

Elder, G. (1994). Time, human agency, and social change: Perspectives on the life course. *Social Psychology Quarterly, 57,* 4–15.

Elder, G. (1995). Life trajectories in changing societies. In A. Bandura (Ed.), *Self-efficacy in changing societies* (pp. 46–68). New York: Cambridge University Press.

Elder, G., & Ardelt, M. (1992). *Families adapting to economic pressure: Some consequences for parents and adolescents.* Paper presented at the Society for Research on Adolescence, Washington, DC.

Falmagne, R. J. (1975). *Reasoning: Representation and process in children and adults.* Hillsdale, NJ: Erlbaum.

Fausto-Sterling, A. (1992). *Myths of gender: Biological theories about women and men* (2nd ed.). New York: Basic Books.

Freeman, M. A., & Bordia, P. (2001). Assessing alternative models of individualism and collectivism: A confirmatory factor analysis. *European Journal of Personality, 15,* 105–121.

Furstenberg, F. F., Cook, T., Eccles, J., Elder, G. H., Jr., & Sameroff, A. (1999). *Managing to make it: Urban families in high-risk neighborhoods.* Chicago: University of Chicago Press.

Gardner, R., & Heider, K. G. (1969). *Gardens of war: Life and death in the New Guinea stone age.* New York: Random House.

G., Gross, L., Morgan, M., Signorielli, N., & Shanahan, J. (2002). Growing up with television: Cultivation processes. In J. Bryant & D. Zillman (Eds.), *Media effects: Advances in theory and research* (2nd ed., pp. 43–68). Mahwah, NJ: Erlbaum.

Gibson, C. B. (1995). Determinants and consequences of group–efficacy beliefs in work organizations in U.S., Hong Kong, and Indonesia. Unpublished doctoral dissertation, University of California, Irvine.

Giddens, A. (1984). *The constitution of society: Outline of the theory of structuration.* Cambridge: Polity Press; Berkeley, CA: University of California Press.

Gjerde, P. F., & Onishi, M. (2000). Selves, cultures, and nations: the psychological imagination of the Japanese in the era of globalization. *Human Development, 43,* 216–226.

Gould, S. J. (1987). *An urchin in the storm.* New York: Norton.

Gowaty, P. A. (1997). *Feminism and evolutionary biology.* New York: Chapman & Hall.

Gusnard, D. (2005). Being a self: Considerations from functional imaging. *Consciousness and Cognition, 14,* 679–697.

Hall, J. R. (1987). *Gone from the promised land: Jonestown in American cultural history.* New Brunswick, NJ: Transaction Books.

Harré, R., & Gillet, G. (1994). *The discursive mind.* Thousand Oaks, CA: Sage Publications.

Hattiangadi, N., Medvec, V. H., & Gilovich, T. (1995). Failing to act: Regrets of Terman's geniuses. *International Journal of Aging and Human Development, 40,* 175–185.

Hawkins, R. P., & Pingree, S. (1991). Divergent psychological processes in constructing social reality from mass media content. In N. Signorielli & M. Morgan (Eds.), *Cultivation analysis: New directions in media effects research* (Vol. 108, pp. 35–50). Beverly Hills, CA: Sage Publications.

Heckhausen, J. (1987). Balancing for weaknesses and challenging developmental potential: A longitudinal study of mother-infant dyads in apprenticeship interactions. *Developmental Psychology, 23,* 762–770.

Hochberg, L., Serruya, M., Friehs, G., Mukand, J., Saleh, M., Caplan, A., et al. (2006). Neuronal ensemble control of prosthetic devices by a human with tetraplegia. *Nature, 442,* 164–171.

Holden, G. (1991). The relationship of self-efficacy appraisals to subsequent health related outcomes: A meta-analysis. *Social Work in Health Care, 16,* 53–93.

Holden, G., Moncher, M. S., Schinke, S. P., & Barker, K. M. (1990). Self-efficacy of children and adolescents: A meta-analysis. *Psychological Reports, 66,* 1044–1046.

Holton, R. (2000). Globalization's cultural consequences. *Annals, AAPSS, 570,* 140-152.

Joo, Y. J., Bong, M., & Choi, H. J. (2000). Self-efficacy for self-regulated learning, academic self-efficacy, and Internet self-efficacy in web-based instruction. *Educational Technology Research & Development, 48 ,* 5–18.

Kagan, J. (1981). *The second year: The emergence of self-awareness.* Cambridge, MA: Harvard University Press.

Karniol, R. (1989). The role of manual manipulative stages in the infant's acquisition of perceived control over objects. *Developmental Review, 9,* 205–233.

Kim, U., Triandis, H. D., Kâitçibasi, C., Choi, S., & Yoon, G. (1994). *Individualism and collectivism: Theory, method, and applications.* Thousand Oaks, CA: Sage Publications.

Kim, U., & Park, Y.(2006) Factors influencing academic achievement in relational cultures: The role of self-, relational, and collective efficacy. In F. Pajares & T. Urdan (Eds.), *Self-Efficacy Beliefs of Adolescents* (pp. 267–285). Greenwich, CT: Information Age.

Korsgaard, C. (1996). *The sources of normativity.* Cambridge: Cambridge University Press.

Langer, E. J. (1983). *The psychology of control.* Beverly Hills, CA: Sage Publishing.

Lent, L. (1982). The perception of causality in infants. *Perception, 11,* 173–186.

Lent, R., Brown, S., & Larkin, K. (1987). Comparison of three theoretically derived variables in predicting career and academic behavior: Self-efficacy, interest congruence, and consequence thinking. *Journal of Counseling Psychology, 34,* 293–298.

Lent, R., Brown, S., Nota, L., & Soresi, S. (2003). Testing social cognitive interest and choice hypothesis across Holland types in Italian high school students. *Journal of Vocational Behavior, 62,* 101–118.

Levy, R. I. (1969). *On getting angry in the Society Islands.* In W. Caudill & T. Y. Lin (Eds.), *Mental health research in Asia and the Pacific* (pp. 358–380). Honolulu, HI: East-West Center Press.

Lewis, M., & Brooks-Gunn, J. (1979). *Social cognition and the acquisition of self.* New York: Plenum.

Mandler, J. (1992). How to build a baby: II. Conceptual primitives. *Psychological Review, 99,* 587–604.

Matsumoto, D., Kudoh, T., & Takeuchi, S. (1996). Changing patterns of individualism and collectivism in the United States and Japan. *Culture & Psychology, 2,* 77–107.

Merton, R. K., & Barber, E. (2004). *The travels and adventures of serendipity.* Princeton: Princeton University Press.

Millar, W. S. (1972). A study of operant conditioning under delayed reinforcement in early infancy. *Monographs of the Society for Research in Child Development, 37*(2, Serial No. 147).

Miller, E., & Cohen, J. (2001). An integrative theory of prefrontal cortex. A*nnual Review of Neuroscience, 24,* 167–202.

Miller, S. M. (1980). Why having control reduces stress: If I can stop the roller-coaster I don't want to get off. In J. Garber & M. E. P. Seligman (Eds.), *Human helplessness: Theory and applications* (pp. 71–95). New York: Academic Press.

Moerk, E. L. (1995). Acquisition and transmission of pacifist mentalities in Sweden. *Peace and Conflict: Journal of Peace Psychology, 1,* 291–307.

Moritz, S. E., Feltz, D. L., Fahrbach, K. R., & Mack, D. E. (2000). The relation of self-efficacy measures to sport performance: A meta-analytic review. *Research Quarterly for Exercise and Sport, 71,* 280–294.

Muñoz, R., & Mendelson, T. (2005). Toward evidence-based interventions for diverse populations: The San Francisco General Hospital prevention and treatment manuals. *Journal of Consulting and Clinical Psychology, 73,* 790–799.

Nagel, E. (1961). *The structure of science.* New York: Harcourt, Brace and World.

Ozer, E. M. (1995). The impact of childcare responsibility and self-efficacy on the psychological health of working mothers. *Psychology of Women Quarterly, 19,* 315–336.

Papousek, H., & Papousek, M. (1979). Early ontogeny of human social interaction: Its biological roots and social dimensions. In M. von Cranach, K. Foppa, W. LePenies, & D. Ploog (Eds.), *Human ethology: Claims and limits of a new discipline* (pp. 456–478). Cambridge: Cambridge University Press.

Park, Y. S., Kim, U., Chung, K. S., Lee, S. M., Kwon, H. H., & Yang, K. M. (2000). Causes and consequences of life-satisfaction among primary, junior high, senior high school students. *Korean Journal of Health Psychology, 5,* 94–118.

Pastorelli, C., Caprara, G. V., Barbaranelli, C., Rola, J., Rozsa, S., & Bandura, A. (2001). Structure of children's perceived self-efficacy: A cross-national study. *European Journal of Psychological Assessment, 17,* 87–97.

Reichard, G. A. (1938). Social life. In F. Boas (Ed.), *General anthropology* (pp. 409–486). Boston: Heath.

Rogers, E. M., Vaughan, P. W., Swalehe, R. M. A., Rao, N., Svenkerud, P., & Sood, S. (1999). Effects of an entertainment-education radio soap opera on family planning behavior in Tanzania. *Studies in Family Planning, 30,* 1193–1211.

Sadri, G., & Robertson, I. T. (1993). Self-efficacy and work-related behavior: A review and meta-analysis. *Applied Psychology: An International Review, 42,* 139–152.

Sampson, E .E. (1977). Psychology and the American ideal. *Journal of Personality and Social Psychology, 35,* 767–782.

Schechtman, M. (1997). The brain/body problem. *Philosophical Psychology, 10,* 149–164.

Schooler, C. (1987). Psychological effects of complex environments during the life span: A review and theory. In C. Schooler & K. W. Schaie (Eds.), *Cognitive functioning and social structure over the life course* (pp. 24–49). Norwood, NJ: Ablex.

Schunk, D. H., & Zimmerman, B. J. (Eds.). (1994). *Self-regulation of learning and performance.* Hillsdale, NJ: Erlbaum.

Searle, J. R. (2003). *Rationality in action.* Cambridge, MA: The MIT Press.

Shih, S., & Alexander, J. M. (2000). Interacting effects of goal setting and self- or other-referenced feedback on children's development of self-efficacy and

cognitive skill within the Taiwanese classroom. *Journal of Educational Psychology, 92,* 536–543.

Snyder, M. (1980). *Seek, and ye shall find: Testing hypotheses about other people.* In E. T. Higgins, C. P. Herman, & M. P. Zanna (Eds.), *Social cognition: The Ontario symposium on personality and social psychology* (Vol. 1, pp. 105–130). Hillsdale, NJ: Erlbaum.

Stagner, R. (1981). Training and experiences of some distinguished industrial psychologists. *American Psychologist, 36,* 497–505.

Stajkovic, A. D., & Luthans, F. (1998). Self-efficacy and work-related performance: A meta-analysis. *Psychological Bulletin, 124,* 240–261.

Tienda, M., & Mitchell, F. (2006). *Multiple origins, uncertain destinies: Hispanics and the American future.* Washington, DC: National Academies Press.

Vandello, J. A., & Cohen, D. (1999). Patterns of individualism and collectivism across the United States. *Journal of Personality and Social Psychology, 77,* 279–292.

Vaughan, P. W., Roger, E. M., Singhal, A., & Swalehe, R. M. (2000). Entertainment-education and HIV/AIDS prevention: A field experiment in Tanzania. *Journal of Health Communications, 5,* 81–100.

Watson, J. (1979). Perception of contingency as a determinant of social responsiveness. In E. B. Thoman (Ed.), *Origins of the infant's social responsiveness* (Vol. 1, pp. 33–64). New York: Halsted.

Wiggins, J. S. (1991). Agency and communion as conceptual coordinates for the understanding and measurement of interpersonal behavior. In D. Cicchetti, & W. Grove (Eds.), *Thinking clearly about psychology: Essays in honor of Paul Everett Meehl* (pp. 89–113). Minneapolis: University of Minnesota Press.

Wilson, E. O. (1988). *Consilience: The unity of knowledge.* New York: Knopf.

Yamagishi, T. (1988). The provision of a sanctioning system in the United States and Japan. *Social Psychology Quarterly, 51,* 265–271.