Models and metatheories of human development have evolved significantly over the previous two centuries. Most changes are clearly reflections of progress and integration. Early mechanistic models, for example, have incorporated organismic features such as when behaviour is linked to changes in biology (Gériépy, 1996) or when social learning theorists speak of agents and agency (Bandura, 1997). Some organismic models, on the other hand, have revealed mechanistic tendencies such as when behaviour interventions are focused on the first few years of life under the belief they will inoculate children from future harm (Lewis, 1997). Because these changes have blurred traditional boundaries among metatheories, I revisit the origins of the organismic model in an effort to revitalise it by highlighting the place and functions of agency in development. In addition, I will examine context's role in influencing the expression of agency throughout development and discuss both statistical advances and methodological limitations for modelling the agentic self in context.

My primary goal is to discuss the linkages among the various dimensions that comprise personal agency across the lifespan. Although volitional goal-directed activity (i.e., agency) has an evolutionary basis (Chapman, 1984; see Hawley & Little, 2002, for a detailed exposition), I will focus on the various levels of ontogenetic meanings as they relate to the individual's sense of personal agency. Generally speaking, one's sense of personal agency stems from goal-driven actions. It functions as a personal resource for facing the challenges that emerge throughout development (Little, 1998). This sense of personal agency is particularly relevant given today's developmental milieu of increased challenges and potential disruptions to the successful development of individuals. Even casual observation reinforces the notion that most cultural, societal, social, and familial structures have dramatically transformed during the latter part of the previous century. Because sociocultural features such as educational choices, familial constellations, behavioural norms, career directions, post-retirement lifestyles, and so on will probably continue to become more varied and differentiated, individuals will be faced with new and diverse challenges to successful development at every phase of the lifespan. How individuals
meet and overcome such life-course challenges is the operative realm of personal agency.

This chapter is organised around three related themes that I feel need to become focal directions of study in order to fully articulate the role that agency plays in development. The first focal direction is to understand better the interrelations among the varied features of the self system and the synergistic connections among the layered self-regulatory processes of development (e.g., motives, goals, volitional control mechanisms, mental representations, subjective interpretations, and so on). As I describe in detail later, an organismic perspective on the individual offers a useful starting point from which to unpack fully the relationships among the qualities and quantities of one's sense of personal agency (e.g., Hawley & Little, 2002; Little, Hawley, Henrich, & Marsland, 2002; Magnusson & Cairns, 1996; Ryan, 1993; Ryan, Sheldon, Kasser, & Deci, 1996).

The second focal direction is to examine the influence of context more precisely (e.g., Bronfenbrenner, 1995; Lerner, 1996). Although the resurgence of cross-cultural designs, for example, indicates progress in this direction, I suggest that clearly articulated theories about the nature of contexts need to emerge and that correspondingly compelling designs for contextual studies need to be implemented. Simply demonstrating that a change in context is associated with a change in behaviour provides only rudimentary information about what aspects of contexts are operating and does little to clarify the individual-level mechanisms by which context has its effects.

The final focal direction is to increase further the methodological sophistication by which the interplay of context and self is disentangled. The latter quarter of the previous century saw the introduction of an extremely powerful and versatile family of statistical modelling tools (e.g., general structural equation modelling techniques, including specific instantiations such as multilevel, growth-curve, and multiple-group models; Little, Schnabel, & Baumert, 2000; Marcoulides & Schumacker, 1996). These modelling tools are continuing to be refined and will soon offer even greater flexibility for researchers to ask and answer the types of complex questions that are needed for understanding developmental processes across contexts.

This chapter finishes with a discussion of a number of issues and broader themes that emerge when one considers these factors in the study of agency in development.

**ORGANISMIC PERSPECTIVE REVISITED**

Because many research accounts rely on implicit assumptions about the nature of human behaviour, observers have noted that more rapid and efficient progress in the social and behavioural sciences will come about if we make explicit the larger models of development that drive our various micro-theories (Shanahan, Valsiner, & Gottlieb, 1997). Historically, the organismic
model has provided a unifying basis for a number of productive and influential research traditions (see Cairns, 1983, 1998). In light of current trends towards larger and more encompassing studies of development, I feel that the organismic model remains a viable and useful vantage point from which to view human development, particularly the development of the self.

At the heart of an organismic perspective is the presumption that individuals are active agents and contributors to their own development. An organismic perspective views volitional behaviour as goal-directed actions, where actions are both purposeful and self-initiated (Brandtstädter, 1984, 1998; Chapman & Skinner, 1985). By extension, individuals are inherently active and self-regulating—that is, agentic. An organismic approach to understanding the developing individual also involves an explicit focus on the interface between the self and context (Little et al., 2002; Ryan et al., 1996). Contexts reflect complex constellations of features, spanning the molar and micro levels, that both constrain and afford behaviour (Bronfenbrenner, 1995; Gottlieb, 1997). Taken together, such features create a psychological carrying capacity within which the individual operates.

As an agent in his/her own development, the individual functions as an integrated organism (e.g., assimilative and accommodative processes are invoked to maintain balance and equilibrium). Although an individual both influences and is influenced by the contexts in which s/he acts and develops, the agentic self must negotiate the affordances and constraints of each context. Developmentally speaking, an individual continually progresses along a predominantly self-guided path, giving form and meaning to his or her actions along the way. Such actions result from selective choices that emanate primarily from the individual. The organismic perspective presumes, then, that individuals are active agents who plot and navigate a chosen course through the uncertainties and challenges of the social and ecological environments; however, like trade winds and currents, environments sometimes hinder, sometimes bolster, and other times change the course of a developmental route (Little et al., 2002).

As part of their integrated functioning, individuals engage in a self-evaluative feedback process, continuously interpreting and evaluating actions and their consequences. Across the episodes of activity in the varying constellations of context, the individual continually discovers and refines who one is and what one is capable of and, perhaps most importantly, under what conditions one’s actions can or cannot have a desired effect. Under optimal circumstances, this continually evolving and actively monitored self-system gives rise to a strong and effective sense of personal agency. Different individuals with differing experiences and differing predispositions, however, will yield varying profiles of personal agency because the sense of agency is a multifaceted and striated system of motives, beliefs, and behaviours (Hawley & Little, 2002; Little et al., 2002; Little & Wanner, 1997).

This revitalised organismic perspective on agency necessarily entails a systems approach wherein the functioning of one system, such as the peer
Little

system, influences the functioning of another, such as the self (Gottlieb, 1997). Because systems and subsystems are yoked, significant advances in understanding the breadth of human behaviour will require that they be examined together rather than in isolation (Magnusson & Cairns, 1996). Such a view necessitates greater investment in planning a data collection protocol and greater investment in procuring appropriate samples of participants (e.g., samples derived on the basis of theoretical considerations rather than convenience). In my view, such larger-scale integrated studies of development can succeed only if they share a common and unifying meta-theoretical perspective. When the pieces of a research programme come from different models and metaphors, they are unlikely to fit together into a coherent picture. The puzzle pieces would rarely match up and the resulting picture would look more cubist than portraiture.

Not only does an organismic perspective encourage broad-based studies of the agentic self, but it also supports a concerted focus on resilience and successful developmental outcomes. As each child begins to discover who s/he is and what s/he is capable of, the evolving competence system contributes to an integrated sense of personal agency—an agentic self. The resulting systems of action-control motives, goals, beliefs, and behaviours provide a developmental foundation that, as mentioned, is called upon to negotiate various developmental tasks and challenges throughout the life course. In facing these challenges, an agentic individual is primarily the origin of his or her actions, has high aspirations, perseveres in the face of obstacles, sees more and varied options, learns from failures, has a greater sense of well-being, and so on. A nonagentic individual, on the other hand, is primarily the pawn of unknown extra-personal influences, has low aspirations, is hindered with problem-solving blinders, and often feels helpless and unempowered (Little, 1998; Little et al., 2002; Ryan et al., 1996; Skinner, 1995; Weisz, 1990). Such undesirable characteristics can stimulate additional negative feedback from others, such as teasing and victimisation (Graham & Juvonen, 1998).

From a revitalised organismic perspective, one's sense of personal agency is not simply a reinvention of constructs such as self-esteem, self-efficacy, self-concept, and so on. Rather, it is a layered concept starting with the premise of volitional goal-directed actions. Such actions are motivated by both biological and psychological needs (Hawley, 1999; Hawley & Little, 2002; Little et al., 2002). Such actions are propelled by specific action-control beliefs about the links among agents, means, and ends (Chapman, 1984; Little, 1998; Skinner, Chapman & Baltes, 1988). Such actions are guided by general action-control behaviours that entail self-chosen forms and functions, means and ends (Lopez & Little, 1996; Little, Jones, Henrich, & Hawley, 2001; Little, Lopez, & Wanner, 2001).

Regarding action-control beliefs, this perspective explicitly differentiates the possible belief relations among the primary constituents of intentional action (Chapman, Skinner, & Baltes, 1990; Little, Oettingen, Stetsenko, &
Self as agent

Agency ill development

Others as agent

Causality beliefs

Figure 12.1 Relations among the three constituents of human action, both when the self is the agent and when others are the agent. Means can vary from personal attributes such as effort and ability to external aids such as friends and teachers.

Baltes, 1995; Skinner & Chapman, 1987; Skinner et al., 1988; Stetsenko, Little, Gordeeva, Grasshof, & Oettingen, 2000). The three constituents of an action sequence are the actor, the goal, and the various means by which the goal (or end) can be obtained. Agentic action reflects an agent’s general awareness of goals and the means to the goals, taking personal responsibility in pursuing a chosen goal, and the ability to select and utilise potential means (Chapman & Skinner, 1985). Given the three constituents of volitional activity, a number of belief types about the relations among these constituents are possible.

Figure 12.1 displays six of these belief types (see also Skinner, 1996). Control expectancy reflects general beliefs about the link between the self as agent and the goal (e.g., “when I want to do __, I can.”). Collective efficacy, on the other hand, reflects the belief link between one’s focal cultural group and the goal. Capacity beliefs reflect the links between the self and the various means that are relevant for attaining a chosen end (“I’m able to put forth enough effort to do this”, “I possess the necessary skills to do this”). The counterpart linkage, when others are viewed as the agent of behaviour, can be termed collective capacity beliefs. Similarly, the link between the various means and ends can have two levels of meaning. When the self is the agent, the resulting system of beliefs would reflect strategy beliefs (i.e., what means work for me). Causality beliefs, on the other hand, reflect general views of the utility or usefulness of a given means such effort, luck, or ability for attaining a particular goal (Chapman et al., 1990; Little et al., 1995; Oettingen et al., 1994; Skinner et al., 1988).

Ample research has supported these distinctions (see Little, 1998; Skinner, 1996, for overviews). A defining feature of the action-control view that separates it from other similar models of control perceptions is the...
explicit means–ends analysis of actions. For example, because ability is considered separately from other means such as effort and access to powerful others, Stetsenko et al. (2000) were able to identify a means-specific gender bias in the action-control beliefs of school-aged children. Girls whose actual school performance was on a par with boys, reported lower beliefs in their own ability to accomplish getting good grades than did boys. All other beliefs about their personal agency, such as effort, luck, and access to teachers, were on an equal footing, as would be expected from equally performing groups of children. Only the girls’ beliefs in their access to ability revealed the bias. In other words, by focusing on the unique means that are utilised to achieve a goal, Stetsenko and co-workers identified a specific source of bias in girls’ personal agency profile that may hinder them as they progress along the educational ladder.

A means–ends analytic framework not only applies to beliefs about behaviour, but also to actual behaviours that are enacted when goal pursuit is challenging. For example, the various strategies of coping behaviours that have permeated the literature can be categorised in terms of the nature of the means that are utilised (e.g., prosocial versus asocial) and the specific ends that are pursued (negotiating the stressor directly, or indirectly alleviating the consequences of the stressor; Lopez & Little, 1996). Figure 12.2 displays the conceptual quadrants into which many extant coping strategies can be placed. This multi-axial representation was tested in a short-term longitudinal study and found to be fully adequate in capturing the variability in coping behaviours both within and across measurement occasions (Little, Lopez, & Wanner, 2001). The model suggests that coping behaviours can be classified in terms of their form, such as utilizing others or
Figure 12.3 Structural relations and decompositions among the forms and functions of aggressive behaviour (from Little et al., 2001).

relying on self-resources, and the function, such as taking direct action towards the stressor or indirect action to remediate the impact of the stressor.

Such a means–ends analysis can also be applied to other domains of behaviour. For example, the research on aggressive-agonistic behaviour has revealed muddied mixtures of means (e.g., physical, verbal, relations) and ends (instrumental, reactive). Using an organismic metatheoretical perspective, my colleagues and I developed a measurement and analysis system that differentiates among the different forms and functions of aggressive behaviour (Little et al., 2001). Figure 12.3 displays this decomposition of aggressive behaviour in terms of its form (means) and function (ends). With this measurement and analysis system, we have been able to show new and novel relationships among the various aggression dimensions. For example, in the literature, proactive/instrumental measures of aggression typically correlate in the .6 to .8 region with reactive measures of aggression (Dodge & Coie, 1987; Poulin & Boivin, 1999; Price & Dodge, 1989). Our work has shown that, when one accounts for the form of the aggression (e.g., overt, relational), the instrumental and reactive functions of aggression are, in fact, independent (uncorrelated) processes.

A number of commonalities, which emanate from the overarching organismic metatheoretical perspective, unite these different aspects of agentic action. First, because actions are coordinated in specific domains of goal-directed activity, they are domain specific. Second, because a specific action is chosen from among a number of possible actions, it is means
specific. Third, because of the domain-specific and means-specific nature of actions in service of self-chosen goals, they can be classified and categorised in terms of a means–ends, form–function analytic framework.

Understanding the complexities of organismic activity clearly requires an understanding of how aspects of individuals such as their beliefs and behaviours coordinate together in the pursuit of life-course goals. As I see it, the linkages among the layered aspects of the agentic self are best examined when the operational nature of each layer stems from a common metatheoretical perspective, in this case, the organismic perspective.

THE ROLE OF CONTEXT

A contextual perspective on agency explicitly acknowledges that every developmental epoch represents a unique constellation of influences (Bronfenbrenner, 1995; Lerner, 1995, 1996). Contexts provide both affordances and constraints on the range of individual actions and behaviours that can be expressed. Although some mechanisms of development are clearly universal (i.e., transcend context), many of the mechanisms that will ultimately account for the diversity of human behaviour across developmental contexts and the life course will probably be context-specific or context-moderated mechanisms (i.e., mechanisms that function in interaction with contextual features). When viewed in their entirety, both the pre- and post-millennial changes in the various social structures amount to unprecedented variability among the contexts in which development unfolds. As a result, a primary challenge to understanding the role of agency in development is to examine the organismic processes of change, growth, and transformation as they unfold within and between these varied contexts.

As suggested earlier, a given context reflects a specific constellation of features (i.e., where intra-, inter-, and extra-personal features converge). These multilayered features can provide, if carefully contrasted, a quasi-experimental manipulation of many potential mechanisms that can shape and mould individual development. Given that the features in which developmental processes occur can be quasi-systematically varied, contextual designs can intimate the working mechanisms that influence development and they can dramatically increase our universe of generalisation. In other words, comparing individual development across varying contexts can highlight which facets of the self-system are independent of the contextual variations and which are not (e.g., Little, 1998). Similarly, comparing the same individual across numerous contexts would reveal which processes of the agentic self function similarly (transcend context) and which function uniquely as a result of context-specific constraints or affordances (Mischel & Shoda, 1995). Well-conceived contextual studies can systematically vary and thereby quasi-experimentally isolate specific features of both contexts and individuals in order to derive the nature and generality
of their respective influences on developmental outcomes (Hawley & Little, 1999).

The dyad, for example, reflects a unique and informative context for study. Individuals carry with them orientations, response patterns, abilities, motivations, and so on. As soon as social behaviour begins, the characteristics of one individual collide with the characteristics of other individuals. Much can be learned about the development of the agentic self simply by exploring in detail these individual–individual interactions. With a general bias toward “large-n studies”, developmentalists sometimes miss opportunities for rich “small-n” data designs such as small-group, round-robin designs. Small groups allow for a microanalysis of the rich contexts of interaction among the different characteristic features of individuals. Research has shown that children will vary their behaviour according to the past interactions and behaviour patterns of their partners. Across the various dyadic interactions, a child can exhibit agency with one child and deference to another according to their history of wins and losses (see Hawley & Little, 1999).

Although context-related effects can be readily documented, advances in understanding how context influences individuals have been slow to emerge because of the reliance on context-level comparisons of groups of individuals. Rather than focus on documenting group-level differences in development across various contexts, a challenge of contextual approaches will be to attempt to reduce context to a set of context-level features and individual-differences variables that can effectively explain away the group-level differences of the individuals in a given context. The basic action plan involves first defining the dimensions of context and second developing measures of those dimensions at both the level of the context and the level of the individual. By explicitly measuring the defining features of various contexts, greater precision in isolating the working mechanisms of change, growth, and transformation would be gained. For example, instead of characterising two sociocultural contexts as individualistic versus collectivistic, a researcher could measure the degree to which each individual in each context endorses individualistic and collectivistic values and ideals (i.e., one’s personal balance of the cultural values). In this way, one could then examine the relative contribution of individual-level vs. context-level influences on behaviour. The multilevel decomposition of variance from random coefficient models (Kreft & De Leeuw, 1998; also known as Hierarchical Linear Models [HLM] analyses; see Bryk & Raudenbush, 1992) will be particularly useful for modelling the agentic self across context and time.

The contextual perspective also encourages a typological approach to understanding individual development. Given that (a) few developmental processes are likely to operate in the same way for all individuals and that (b) the self is composed of synergistically intertwined layers, one could reasonably expect differing constellations of beliefs and behaviours that
characterise subsets of individuals. These subgroups or typologies would also be characterised by a range of individual differences within them. In this sense, a typological profile would be considered a specific developmental context, with unique affordances and constraints on behaviour. For example, the profile of an individual who is both high on individualistic values and collectivistic values suggests constraints on behaviour that would not be the same for an individual who is low on both dimensions or high on one but medium or low on the other. Especially when typologies are more theory-driven rather than data-driven, a typological approach can be quite useful for understanding developmental processes (see, e.g., Hawley, Little, & Pasupahiti, in press; Smith & Baltes, 1999).

MODELLING THE AGENTIC SELF IN CONTEXT

The contextual and organismic perspectives on agency necessitate the use of sophisticated statistical and methodological tools in order to disentangle (model) the various sources of influence. A primary goal of a modelling perspective is to make strong tests of underlying theoretical models (i.e., bring implicit assumptions into the explicit realm of model specification). The goal is not to partition the person into discrete sources of variance, but rather to determine how the pieces interlock and what their boundary conditions are and then to assemble the units into a coherent portrait of the individual.

A modelling perspective is not limited to statistical procedures such as structural modelling techniques, it is equally at home within the framework of classical, regression-based techniques (see, for example, Widaman, 2000). The modelling perspective views statistical procedures not as mechanistic ends in themselves (i.e., fixed and rule-bound), but rather as flexible tools that can be adjusted and adapted into an appropriate means for testing a given substantive theory. From a modelling vantage point, statistical methods are used to fit models that are tested against observed data patterns and are implemented such that issues of effect size, parsimony, and theoretical integration are emphasised (cf. null hypothesis testing).

Numerous recent techniques would fit within this modelling framework. For example, dyadic, triadic, and social relations paradigms are extremely useful to model the interactions among individuals (see, e.g., Hawley & Little, 1999; Kenny, 1990). These designs allow decomposition of the systematic sources of variance that contribute to individual behaviour; they also allow decomposition of the degree to which individuals contribute to the behaviour of the larger unit (i.e., dyad, triad, family, and so on; see, for example, Kreppner, 1992). Multiple-group and multilevel designs are useful to compare and contrast the influences of different contexts as well as to partition the degree to which variability in behaviour is associated with contextual features versus individual differences (Little, 1997; Little et al.,
These techniques will be particularly useful to examine differences among groups and subgroups (i.e., typologies) of individuals. Because studies of the agentic self in context will often necessitate large-scale approaches, the demands on participants can be great. However, recent advances in data imputation techniques and incomplete design estimation have tremendous potential for reshaping how we organise our data collection protocols. Various forms of intentionally missing designs can be conceived that would allow researchers to collect data in a more efficient and less costly manner and still be able to draw valid generalisations based on the whole sample of individuals and variables. For example, one could design a study of some large number of individuals, but where any one individual responds to only a subset of the items of interest or where only a randomly selected sub-sample of participants receives additional intensive measurements. With proper care, the missing subset of items or individuals can be imputed veridically (or the missing relationships estimated) such that conclusions and generalisations are drawn on the full set of individuals and variables (Graham & Hofer, 2000; McArdle, 1994). Clearly, at this stage, the boundaries and limitations of such designs still need careful testing, but the potential of such intentionally missing designs is certainly an appealing possibility for large-scale contextual-organismic research programmes.

A second future development that will be useful in this regard is a robust technique to evaluate individual fit of the models that we specify. For example, the Mx program calculates a pseudo-chi-squared value for each individual included in an analysis (see Neale, 2000). This information is useful because it can identify persons for whom the model does not hold. Further advances in this direction will offer information about the source of the misfit and, ideally, provide an algorithm for clustering individuals based on their concordance with the fit of the specified model. Current multivariate analytic techniques generally only focus on two dimensions of the data cube at any one time, with one dimension being the focal dimension and the second being the variance-producing dimension (e.g., variables by persons, persons by variables, variables by occasions). Making multiple dimensions be the simultaneous focus of investigation will yield greater understanding of the complexities of the agentic self.

Finally, recent advances in general structural equation modelling procedures are beginning to overcome one of the more frustrating limitations of this class of modelling technique: Namely, the restriction to linear relationships among continuous variables. Now, the procedures offer researchers the ability to specify latent interactions and nonlinear relationships as well as to model the relations among a mixture of different types of variables and constructs (see, e.g., Little et al., 2000; Marcoulides & Schumacker, 1996). Such advances will undoubtedly allow much greater precision in the manner by which theoretical propositions are specified, estimated, and tested.
SPECIFIC ISSUES

A number of issues about the nature of development arise when one considers the organismic model as the metatheory. These issues highlight the probabilistic complexity of development that will continue to challenge our efforts to model the expressions of personal agency throughout development.

Equipotentiality versus omnipotentiality

Cicchetti (e.g., Cicchetti & Rogosch, 1999) has championed this critical distinction in the field of developmental psychobiology. Equipotentiality refers to the idea that many paths or antecedent conditions can lead to the same outcome or consequent condition. Omnipotentiality refers to the idea that common pathways and antecedent conditions can give rise to a plethora of outcomes or consequent conditions. Agentic choices and inputs throughout development are features likely to yield greater predictability in the varied directions and outcomes of developmental changes along the life course.

Heterotypic versus homotypic constructs

The continuity of the nature of constructs across development poses significant challenges to understanding the role of agency in development. Such challenges to measurement occur when a construct changes forms across development or when it takes on various forms across individuals, but still serves the same function. The nature and function of the layers of personal agency reflect a set of constructs that evolve in form throughout development. Similar to the methodological challenge of cross-cultural comparisons (Little, 1997), the challenge to developmentalists will be to develop measurement instruments and statistical tools to ensure the metric comparability of the dimensions of personal agency as they continue to transform across the lifespan.

A related and relevant distinction is that between the surface-structure and the deep-structure meaning of behaviours. For example, resource control theory (Hawley, 1999) posits that the deep-structure goals of an evolutionarily adapting organism do not change across development—that is, the goal is optimal resource control. However, the surface-structure manifestations of that driving force change dramatically with age. In toddlerhood, coercive strategies of resource control are most common and effective. By early childhood and throughout development, more differentiated structures of resource control emerge such as prosocial strategies (Hawley, 1999).
Horizontal versus vertical cross-disciplinary integration

Many researchers have cried out for greater interdisciplinary cooperation. At least two dimensions of cross-disciplinary integration can be brought to bear in understanding agency in development. The vertical dimension focuses on the up-down linkages from genes, through a specific class or type of behaviour, to higher levels of sociocultural constraints or influences. From this perspective, a behaviour such as aggression would be examined at the level of hormones, the forms and functions of the behaviour, and the socio-cultural context that promotes or inhibits the degree of aggression. The horizontal dimension focuses on the lateral linkages spanning aspects of affect, behaviour, and cognition. From this perspective, a behaviour such as school performance would be examined by integrating various sources of influence such as beliefs, motivational orientation, teacher-skills, parental support, and so on. In order to understand agency in development, research programmes will need to be highly collaborative and designs will need to be both more encompassing of the various micro-divisions of the field, that is, more multidisciplinary in nature.

Regarding collaborative work, a major goal of the next era should be to pool the intellectual and talent capital of numerous researchers in order to ensure that the large-scale research programmes are conducted well. For example, a specialist on control and motivation can join forces with a specialist in personality and a specialist on emotion regulation to design a study that does more than just explore the inter-relations among the separate categories of study, but rather, generates and tests meaningful hypotheses regarding the interface among the areas. Such approaches would advance our science by allowing us to contrast, reconcile, and integrate the plethora of microtheories that abound in developmental psychology.

Cross-cultural approaches are just one manifestation of collaborative work. Another type are the interdisciplinary network studies that integrate various disciplines in the social and behavioural sciences and cross over into the biological and neurobiological realms (e.g., the Berlin Aging Study; Baltes & Mayer, 1999). The model of the network will certainly be one instantiation of the successful research programme in the years to come. Such a model will probably impact the culture of psychological enquiry. For example, it is likely that fewer studies will emerge with single-authored credits. Instead, the results of research teams and networks will continue to propagate our journals (e.g., Grob, Little, Wanner, Wearing, and EURONET, 1996).

In my view, however, cross-disciplinary projects will suffer the cacophony of asynchronous instruments if there is no consensus or agreement about the nature of development. With a unified view such as the agentic-organismic model outlined here, the many parts would be able to work in concert to yield a clear symphony of human development.
Direct versus indirect and reciprocal effects

The distinction between direct and indirect influences on development has become more relevant with the advent of structural equation modelling (SEM) procedures. The traditional approach to identifying a mediator (Baron & Kenny, 1986) has given way to the SEM approach, which entails establishing a set of simultaneously estimated linkages (i.e., A to B to C). The magnitude and significance of the parameters are directly interpreted. Mediation is tested by adding an additional path from A to C that bypasses B. If this path is nonsignificant and does not change the magnitude of the A to B and B to C parameter estimates, mediation is concluded. Moreover, the significance of the indirect relationships between A and C is directly calculated as part of the procedures. However, full mediation is an idealised situation. In many applications, both indirect and direct effects can occur and partial mediation would be concluded. Proximal versus distal nature of the constructs is used to justify the placement or ordering of constructs. With time-order measurements, direct and indirect effects can be calculated to examine reciprocal effects among a set of constructs.

GENERAL IMPLICATIONS OF THE REVITALISED ORGANISMIC PERSPECTIVE

A determined focus on the role of personal agency in development can yield a better understanding of the complexities of the relationships between context and self and how they influence successful development along the life course. The type of research that I have outlined here lies at the cusp between basic and applied paradigms. Therefore, the results of studies that focus on the various themes I have presented have real potential to impact the field. From a basic research perspective, they allow strong tests of competing theoretical models and provide important integrative implications. From an applied perspective, the mass of coordinated knowledge that potentially can be gained would allow policy-oriented programmes the needed basis for designing interventions that are maximally effective. Such interventions would thereby reflect the complexities and multiple-pathways in the development of the agentic self.

A larger concern is clearly the degree to which we can make statements about causality in the context of quasi-experimental designs. As with any scientific method, threats to validity are numerous and, therefore, great caution is required. On the other hand, solid designs, good theory, and appropriate use of the analytic machinery that is available has the potential to advance our knowledge base at an incredible rate. Multiple levels of analysis techniques and the judicious use of experimentation procedures can alleviate many of the concerns. In order to reap fully the benefits of contextual-organismic studies, however, training programmes will need
to focus greater emphasis on both the basics and advances in quasi-experimental analytic techniques and expand instruction on correspondingly sophisticated designs.

By explicitly examining the role of agency in development, we can identify those features of both individuals and contexts that maximally contribute to the agentic self and successful development along the life course. Understanding the developmental avenues that lead to the emergence of agentic and efficacious individuals can reap great rewards in terms of the productivity and well-being of individuals across the lifespan.

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Growing Points in Developmental Science
An Introduction

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