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From a Baby Smiling; Reflections on virtues in development

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*OUTLINE:*

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I believe I can best serve discussion by adopting a personal tone in sharing my experiences in thinking about this topic, reflecting on observations from my career as a developmental researcher and clinician. I must say that now, as a beginning student in the discourse of virtues, I have found my journey of reflective discoveries both motivating and exciting. For this I am grateful to the organizers of the symposium and anticipate encountering new questions and insights as we go forward.

**Choosing a Framework**

My attention was drawn to thinking about virtues not too long ago when I was helping to set up and evaluate new programs in Early Head Start. In interviewing Latino immigrant parents in one program about what they wanted as outcomes for their children growing up, I became surprised. Considering the educational setting in which I was interviewing, what they emphasized more than learning or educational goals was that they wanted their children to grow up to be respectful. As they got older they wanted their children to be considerate of others and respectful of their parental values, views and advice. Some added wishes for honesty, strength and health. I was then struck with the fact that similar aspirations were expressed by other parents coming to Early Head Start, who although all living in circumstances of urban poverty, came from a variety of cultures and backgrounds. Although not a focus of our thinking at the time, parents implicitly seemed concerned about virtues. I then had an opportunity to ask a similar question of Native American Lakota parents living in a Northern plains rural poverty setting. They were explicit, talking directly about virtues, about the importance of 4 Lakota virtues they wanted their children growing up to have. The 4 virtues were typically similar but not always exactly the same. (see Table 1.) [[1]](#footnote-1)

* I then realized that the topic of virtues could be connected to my interest in early moral development. Virtues are important to parents as aspirational aspects of moral development, and much about that begins early. Moreover, in my reflections for this essay, I began to see that the topic interweaves with my career-long interests in emotional availability, the social self and dynamic systems in developmental psychobiology. But I get ahead of myself. Before going further, it seems appropriate to share some answers I came up in regards to definitional questions. Below I share my take on definitions regarding the two key constructs in my title, namely ‘virtues’ and ‘development’.

 *Virtues.* What are virtues? I begin with lists of exemplars. We have noted Lakota virtues, and Table 2 provides other existing lists. As you can see, there are commonalities as well as variations in the virtue lists that are generated from different cultural and contextual backgrounds. From my readings and reflections, I made some framing decisions for this essay. Here they are.

 The overall definition I choose, concerns ‘virtue as an excellence in individual behavior valued by society’[[2]](#footnote-2). Furthermore, guided by my career experience, I select five definitional features. First, because of my interest in early development and adaptation, I choose to focus on human virtues that appear to be universal, rather than those that vary by culture[see Table 3-*Peterson and Seligman…*]. Second, I take it that virtues are social. They have to do with social engagement, either directly in the give-and-take with others, or indirectly via reputation or thought. Third, virtues are more than rational and involve emotions. They can be motivated by other than rational choice. As such they can be considered in line with what Aristotle and others have referred to a “natural virtues”, even before there is full appreciation of situations or contexts. Fourth, virtues have a dark side. They are polar, involving a dynamic interplay with opposites. They often involve a struggle against challenges and are involved in conflict. (see Table 4 where this is represented in Dante’s Inferno: 7 virtues as against 7 capital sins). Fifth, virtues develop over time. (Table 5 presents the definitional features discussed.)

 *Development.* Development can be defined as ‘change within individuals over time’. Its features relate to the fact that it involves increasingly organized complexity. As such it is characterized by differentiation (division into subsystems), integration (articulation of wholeness) and hierarchicalization (successive ordering of parts and wholes) (Werner 1948 ; Sameroff 2010). It involves necessary adaptive exchanges within the environment. Human behavioral development must therefore be considered not only in its biological context--wherein adaptive aspects of interactions involving genetic expression, maturation, physiological patterning, and cognitive construction are salient--but also in its socio-cultural context--wherein adaptive aspects of interactions with an arrangement of social roles, networks, and environments are salient. Human development must also be considered not only from the perspective of continuity, but from the perspective of transformational change; not only from the perspective of successful adaptation and health, but from the perspective of unsuccessful adaptation and disorder. [[3]](#footnote-3) (Table 6 presents these definitional features.)

 **Social Affectivity in Infancy**

 Now I come to the first part of my title. Are there virtues in a baby smiling? As I reflect on the baby watching and experimental studies done with colleagues early in my career, I realize that much of our work in infant social-emotional development served to exemplify aspects of the five virtue features mentioned above. Moreover, babies present individual differences in adaptive behaviors that we regard highly. This raised some relevant questions. Although in general we would want to assign a later-age sense of responsibility and willfulness to what we would consider virtuous acts, to what extent can we see aspects of virtues, or proto-virtues, in infancy? To what extent can we see foundational principles in early development? Before reflecting on answers, let me review some of our findings.

 Our studies began with smiling. The infant’s elicited social smile, typically beginning at 2-3 postnatal months, provides an irresistible incentive for social interaction of caretakers and others who are charmed and feel a transmitted joy with the baby’s facial expressions, eye-to-eye contact and excited crescendoing movements. Our studies documented its adaptive developmental course and variations in orphanage nursery and home environments (Polak, Emde and Spitz 1964 a & b; Emde, Gaensbauer and Harmon 1976) as well as in infants with Down Syndrome and their families (Emde and Brown 1978; Sorce and Emde 1982). We also became fascinated with the antecedents of this species-wide social behavior and did multiple studies of spontaneous smiles that accompanied rapid eye movement (REM) states in newborns, forms of smiling that seemed to be biologically-prepared “practice behaviors”, mediated by midbrain, limbic and deep brain structures (for a summary of multiple reports, see Emde and Harmon 1972).

 At the time we realized positive emotions (and emotions in general) were under-represented in our developmental and clinical thinking. Our group spent time addressing their adaptive value. Instead of being regarded as reactive, intermittent and disruptive states, we illustrated how they were species-wide biologically-based communicative systems better regarded as active, ongoing and adaptive processes. In infancy, different facial expressions of emotion had clear communicative value in interactions with caregivers, both objectively (eg in conveying ‘keep it up, I like it—or not) and subjectively (eg in conveying a good feeling—or distress). Our laboratory in collaboration with others spent time documenting both discrete and ambiguous facial expressions of infant emotions in relation to what they communicated (Emde, Izard, Heubner et al. 1985; Emde, Osofsky and Butterfield 1993). In applied settings, we came to speak of emotions as ‘the language of the baby’ and encouraged clinicians others to attend to them and “use your emotions” (Emde, Gaensbauer and Harmon 1981).

If positive emotion, instantiated by smiling and encouraging engagement and openness to experience with others, might be thought of as virtuous, was there a polar aspect? Was there evidence of a dynamic interplay with opposites? In reflection, this seemed supported by a detailed study of one infant in our orphanage nursery who was documented to be an excellent and outgoing smiler, drawing others to him in many delighted social interactions. He then showed a hypersensitivity to caregiver separations, suffering an anaclitic depression in late infancy and later dark moods and depressions in response to separations in adoptive homes (Emde, Polak and Spitz 1965; Harmon, Wagonfeld and Emde 1982). And of course clinical experience and attachment research both provide extensive documentation of the links between positive attachment quality, and the vulnerabilities it carries with it from prolonged caregiver separation, including sadness, grief and depression (Spitz and Wolf 1946; Bowlby 1980, Egger and Emde 2011).

My reflections continued with thinking about social referencing, another aspect of social affectivity that commanded our attention.  Developing in the latter part of the first postnatal year, when social smiling is more differentiated and more specific to trusted caregivers, social referencing involves a more complex sequence of emotional communication. It occurs when the infant (or older child) is confronted with a situation of uncertainty and, in order to resolve the uncertainty, seeks out the emotional expression of a significant other person in order to resolve that uncertainty and regulate behavior accordingly.  Thus behavioral regulation, resulting from looking at mother’s facial expressions of emotion and deciding whether to approach and explore or not, was demonstrated experimentally in the midst of uncertain situations that we created. With a mother present, situations included infants crawling on a visual cliff, a stranger approaching, and unfamiliar toys (see summary of studies in Emde 1992). We also showed the effects of social referencing on infant behavior in exploring in a playroom according to whether mother was reading a newspaper or not (Sorce and Emde 1981). Maternal Expressions of joy, interest and surprise encouraged approach whereas expressions of anger, fear and sadness did not.  Again, polarities of communicative experience (with positive and negative emotions) were evident.

Two implications emerged from these observations and those of others at the time. Both were part of a dramatic change in thinking that continues today. A first implication was that the human is born social, biologically-prepared by evolution for emotional communication with others. Rather than thinking of the baby as "egocentric" to become social later, the nascent self is a social self to begin with, and develops in transactions with caregiving others. [[4]](#footnote-4) The world of the infant is not only interpersonal but intersubjective, as Daniel Stern documented so well (Stern 1985). Correspondingly, a second implication had to do with development on the parenting side.  A biologically prepared "fittedness" exists in parents for emotionally communicating with their infants as was documented by research on "intuitive parenting" behaviors in infancy (Papousek and Papousek 1979, 1982, Papousek 2011). Further, the burgeoning field of attachment research was illustrating the developmental importance of maternal sensitivity in contributing to infant security and exploration.  Paying attention to emotional communication in its interactive, dyadic and relational contexts then led us to an extension of our work involving emotional availability.

Consistent with attachment concepts, we defined emotional availability as referring to an individual’s emotional responsiveness and attunement to another’s needs and goals, but unlike in attachment research, we emphasized the acceptance of a wide range of emotions rather than responsiveness solely to distress (Emde 1980, Biringen and Robinson 1991). These included both negative (e.g., anger, fear, sadness, disgust and general distress) as well as positive (e.g. interest, satisfaction, joy and surprise) emotions. Moreover, we appreciated emotional availability as explicitly dyadic, evaluating interactions of two partners in an ongoing relationship. On the caregiving side it refers not only to *sensitivity* (as emphasized in attachment research) but also the other main relationship feature of *structuring.* The child’s emotional expressions provide the parent with information about what the child is feeling and what he/she may or may not need or want—and the parents emotions provide the child with information about what she or he is feeling and about with her to explore or not (as in social referencing). Emotional availability is deemed an essential aspect of caregiving and scales to assess it have been developed by Biringen and colleagues (Biringen and Easterbrooks 2012; Biringen, Derschied, Vliegen et al. In Press). [[5]](#footnote-5) Although studies using these scales have been related to outcomes in a myriad of studies in multiple countries, no outcomes, to my knowledge, have been designated as virtues.

 As I reflect on it, research on emotional availability seems relevant to our discussion of virtues for a couple of reasons. It is an aspect of social affectivity that, from the child’s point of view, illustrates variations that may have developmental consequences for later virtues. Secondly, as an interactive and dyadic construct, it raises basic questions. When thinking about early contributions to virtues, what should be our focus? How much of virtue development can be thought of as in the child? How much in the parent? How much in the relationship?

**Moral Development in Infancy**

 Many would consider the topic of virtues in moral terms. Thus it is worth noting that a shift in perspective has occurred in recent scientific discussions of moral behavior that serves to frame our thinking about early moral development. The shift has brought a new emphasis on the emotional, intuitive, and relatively automatic aspects of human moral behavior—as contrasted with the rational, reflective and relatively deliberative aspects of such behavior (Miller 2008, Haidt 2007, Hauser 2006). Accordingly, the roots of morality and its universal aspects have been thought about making use of knowledge from the disciplines of evolutionary biology, animal behavior, cross-cultural and experimental studies and brain research. (For reviews see DeWaal 1996 , Warneken and Tomasello 2006, Hauser 2006, Haidt 2007, Narvaez 2008, Lakoff 2008, Galese, Eagle and Migone 2007and more references in Emde 2011). What is striking is that, overall, there is a broad sense of agreement about designating the core features of human morality. These include the two functions of *reciprocity* and *empathy* (Fry 2006; Hastings, Zahn-Waxler and McShane 2006, Haidt 2007) and I add *valuation* (i.e. the internalization of values and standards) as a third function. Although not designated as such, I believe valuation to be implicit in current discussions of developmental research.

*The REV functions* [[6]](#footnote-6). For convenience I refer to reciprocity (R), empathy (E) and valuation (V) as the REV functions. Evidence indicates that these three functions are biologically-based processes or propensities that can be considered inborn. In other words, from a functional point of view, we might say, they are ones prepared for us by our background of human evolutionary adaptedness. It may be useful before going further to remind ourselves about the universality of these functions. All major moral systems that we know about rely on reciprocity, with some version of the “Golden Rule”: i.e. ‘do unto others as you would have them do to you’. All moral systems rely on emotional communication and empathy (so as to feel another’s distress and possibly to help and not harm the other). All moral systems also rely on a more general internalization of values, standards and rules about what is expectable and acceptable in the world—both physical and social. And the latter carries with it an emotional connection such that one feels a sense of distress when expectations are violated.

Curiously, evidence from human infancy has not, heretofore, been a major part of the recent discussions about the roots of morality. This is remarkable since thinking about “roots” in biologically-based universal functions would seem to imply appearance in early development. Moreover, relevant research in early development has been active in recent decades. Indeed, we can summarize this research by saying that much of moral development occurs early according to the three functions described above, is positive in nature and is enabled by interactions and learning with emotionally available caregivers (Emde, Biringen, Clyman and Oppenheim 1991, Papousek 2011).

Reciprocity, an essential and universal function of human morality, begins as a capacity and motivation for turn taking with mother and others in early infancy, as the research of many has shown (Condon and Sander 1974; Stern 1985, Tronick 1980; Tronick and Cohn 1989). Not only is turn-taking prominent in naturalistic observations, but it is shown in experiments where it can be seen quite dramatically in the well-known ‘still face paradigm’. In a face-to-face situation, when mother stops responding to her four month old, for example, one can regularly show the infant’s efforts of repair in the midst of expressing distress when expectations of reciprocity are violated (Tronick and Cohn 1989).

Empathy and a concern for others, considered as another core aspect of morality, has its developmental origins in the infant’s emotional communications described earlier. Emotional resonance and communication that can be considered precursors of empathy as described, have been documented in early infancy with the newborn’s contagious crying (Sagi and Hoffman 1976), with responses to affective states in mother (Davidson and Fox 1982) and with infant social referencing (Emde 1992). But during the child’s second year there is more. The research of Zahn-Waxler and others (Zahn-Waxler and Radke-Yarrow 1982; Zahn-Waxler, Radke-Yarrow, Wagner and Chapman 1992) has demonstrated that the toddler when confronted by the distress of another not only evidences distress, but may engage in comforting, helping or caring behavior directed to the distressed other. Assessment of a child’s empathy at this age has been a regular aspect of study of individual differences in normal development (Zahn-Waxler, Robinson and Emde 1992). [[7]](#footnote-7)

Valuation begins in earliest infant development and continues. I see it as a consequence of a basic mode of development that we (Emde 1990; Emde, Biringen, Clyman and Oppenheim 1991), following Piaget (1952/1936), also refer to as cognitive assimilation. The infant seeks out the new in order to make it familiar—seeking new experience, and, as we might say, wanting to “get it right” about the world. Some have referred to this as a tendency or a motive for mastery (Morgan and Harmon 1984) and Piaget labeled this function as “a basic fact of life” (Piaget 1952/1936). From the perspective of moral development, in what I am referring to as valuation, expectations are internalized about rules and the way the world should be. Jerome Kagan (1981) documented that during the child’s second year, the toddler when confronted with a broken toy, a flawed doll or a changed environmental circumstance—may evidence distress, indicating discomfort at the violation of standards. The child’s internalizations that I include as valuation comes to involve, over time, social rules, or expectations and standards for conduct as practiced in everyday interactions with parents and others. This line of thinking from an evolutionary-adaptive point of view has been advanced by the programmatic research of Tomasello and colleagues (Tomasello 2009). It has also been reviewed by Rakoczy and Schmidt (2013) who trace the early ontogeny of social norms and indicate how the 3 year old already demonstrates a “normative stance” (understanding of rules that guide the behavior of others in relation to self) as well as an “intentional stance” (understanding that others have feelings and intentions separate from self, often referred to as the capacity for ‘mentalization’ or ‘theory of mind’).

It is not my intention to review the neurobiology underlying these functions, since I assume others (eg see Narvaez 2008) will cover that ground. Still, I cannot resist mentioning the stream of work about mirror neurons that has not only been surprising but enlightens our thinking about social connectedness and early morality. Studies in non-human primates and in humans have shown that when observing another’s actions, automatic, non-conscious and relatively rapid neuronal activation in the observer’s pre-motor and other cortical neurons become linked to neuronal circuits involving intentions and emotions (Gallese, Eagle and Migone 2007; Iacoboni 2008). As recently summarized by a leading investigator, the mirror neurons “… show that we are …biologically wired and evolutionarily designed to be deeply interconnected with one another…at a basic pre-reflective level” (Iacaboni 2008, pp 267-268). Moreover evidence suggests we are wired for what Trevarthen (1979) has referred to as “primary intersubjectivity” or for what others have referred to as a “we-space” or a “we-go” (Iacaboni 2008; Emde 2009). Thus the mirror neuron work seems to form a basis, not only for emotional communication and empathy, but also for mutual processes involved in imitation and reciprocity. Additionally, what is implied by this work is a basis for valuation (that is, for internalizing in a pre-reflective manner intentional standards and what guides behavior for others whom we observe).

*Regulation provided by parenting: REV r.* All three REV functions involve emotional connectedness with others. Now we come to a crucial point. The REV functions cannot exist or develop without the regulation provided by parental interactions—taking place repeatedly, over time and in varied circumstances. And the interactions provided by typical early parental regulation are largely typically positive, providing a sense of security and love, not negative. As the work of Feldman (2007) indicates, early parent-infant synchrony contributes to an affiliative bond that in turn promotes not only a sense of security but later moral development. We have portrayed how earliest infancy (approximately the first postnatal year) can be characterized as the child internalizing the “do’s” of conduct. During toddlerhood (approximately the second year), and adding to continuing to learn about the “do’s”, the child becomes involved in internalizing the “don’t’s” of conduct. In addition to parental regulation contributing to moral emotions (Emde and Oppenheim 1995) the toddler learns negotiation skills as parental prohibitions in the form of “don’ts” become internalized alongside of parental “do’s” (Emde, Johnson and Easterbrooks 1988). In repeated experiences of social referencing such that when the toddler becomes aware of the meaning of “no” and challenges parental prohibitions, skills of negotiation are learned and brought into play. The toddler again and again communicates: do you really mean it? We have also described that as the child develops narrative capacities during the third and fourth years, another aspect of positive early moral development comes into view (Buchsbaum and Emde 1990: Emde, Wolf and Oppenheim 2003). As Jerome Bruner (1986) so aptly demonstrated, the forming and telling of narratives (or coherent stories about one’s experience) involves the ability to envision alternatives, a vital skill for moral development. If one cannot envision alternatives for action, moral decisions are limited. Indeed, the early-developing imagination capacities of the young child can be considered another key aspect of early moral development. In playing with parents, the pre-schooler not only develops an appreciation of other minds (i.e. an intentional stance or theory of mind) but also an appreciation of pretense and rules for varying contexts (i.e. a normative stance as discussed by Rakoszy and Schmidt 2013).

**More about Development and its Resources**

 Now we come to the second part of my title having to do with a deeper set of questions. Are there underlying contributions to the matters we have been discussing that are an inherent part of development itself? In other words, are there basic principles in the process of development, and the way it works, that can be considered background resources for virtues, not only early, but also for development throughout the lifespan? You will not be surprised that my reflections, making use of the dynamic systems view of development noted in definition at the outset of this essay, lead me to answer affirmatively. I begin with a deeper consideration of regulation.

 *Regulation as a foundational principle.*  Regulation is a basic process of life; it characterizes adaptive functioning at all levels of biological systems, from cell to society, as we like to say. As such it has certain dynamic features that are profound. The first concerns basic life functioning. At every systems level there is a fundamental relation between activation and performance. This can be represented by an inverted U-curve (see Fig 1). The top of the inverted U indicates the zone of adaptation or optimal functioning. The left side indicates the zone of under-activation (with low or inadequate performance) and the right side the zone of over-activation (with excess or disrupted performance). This basic relation as a principle of functioning has long been known, and since the ancient Greek times, has been referred to as the “golden mean” between enough and too much, and indicated by the Delphic maxim of “nothing in excess”. Correspondingly, at the individual-behavioral level, and in current times, it has been applied directly to advice about health behaviors (enough vs too much regarding exercise and diet), parenting (frustration of needs vs overindulgence), exposure to stress, understanding challenge and risk for illness and, more directly for us, in thinking about the overall virtues of moderation in one’s temperament.

 A second dynamic feature stems from regulation across development. Thus biological regulation is less to do with relative stability about a point and more to do with relative stability about a trajectory over time (Sander 1983). According to our definition, the increasing complexity of development consists of differentiation (formation of subsystems), integration (articulation of wholeness) and hierarchicalization (successive ordering of parts and wholes). Thus, at every level, regulation deals with complex bidirectional relationships between part and part and part and whole. Moreover, over time, regulatory principles govern necessary dynamic exchanges within the caregiving environment (Sander 1983, Sameroff 2010). Further, development does not occur in a straight line. As indicated earlier, there are times of shift or major transition. These are characterized by emergent new levels of organization for the child and the family. Relevant to a discussion of virtues, these times can be thought of as crisis points with opportunities for positive interventions with parents as has been articulated in the Touchpoints Program of Brazelton and Sparrow (2008).

 *Interplay of Opposites*. A third dynamic feature of regulation points to the interplay of opposites—wherein there is a process of integrating competing or conflicting elements at any systems level. This is an aspect of the developmental process that deserves special consideration as a resource for building virtues. It has drawn the attention of major theorists who have taken different angles of perspective in looking at development. Concerning mental development, Freud emphasized the polarities of active-passive, pleasure-pain and internal-external (Freud 1915/1957). Erikson, in his eight stages of the life cycle emphasized key mental polarities of trust vs. distrust, autonomy vs. shame and doubt, initiative vs. guilt and others for the later stages (Erikson 1950). [[8]](#footnote-8) Concerning bio-environmental perspectives, Sameroff (2010) has portrayed the history of developmental theories over the past century as one involving a central dialectic of opposites regarding nature vs. nurture influences. Among those who have thought about early self development, a number have pointed to a basic polarity of coherence vs. uncertainty. How does the individual achieve a sense of stable unity in the midst of change—especially when change brings so many uncertainties with increasing complexity (Sander 1983: Emde 1983) ?

 The latter question, or course, takes us to a familiar place. The infant cannot be thought of as alone, as Winnicott dramatized in his famous proclamation of “there is no such thing as an infant…only infant with mother” ( ) . In achieving coherence in the midst of uncertainties (uncertainties arising both from within the child and from the environment) much of the infant’s regulation is provided by mother (Hofer 1981) and this in itself is a dynamic process. As Sander has put it, there are necessary “adaptive coordinations” with caregiving others. Not only is there necessary parental sensitivity in responding to infant needs, but it is also important that there are mismatches in interactions as well as matches. (Sander 1983, Biringen, Emde and Pipp-Siegel 1997). [[9]](#footnote-9) Winnicott described the former as providing an “open space” where the infant not only can self soothe but can experience an “intermediate area” of original activity. Indeed, such times can be thought of as those not only of outward openness and curiosity but of inward creativity. Further, as we have discussed, development is characterized by times of transition with emergence of new created functions. I have therefore added creativity in Table 12 as another developmental resource for building virtues.

**Pathways To Virtues and Challenges For Research**

 As mentioned earlier, it seemed appropriate to regard virtues as excellences that would require an individual’s later developed capacity for responsibility and willfulness. Hence, for convenience, we might refer to these universal aspects of early moral development, represented as REV-R, as putative proto-virtues. Orienting questions for research then arise. To what extent are there continuities in REV-R functions across development? To what extent can we link these functions with the adult virtues as found in the lists of Tables 1-4? Further, to what extent is it useful to regard the functions of proto-virtues or later virtues as unidimensional? Are they not multidimensional and overlapping? To illustrate, using the dynamic features of regulation, as discussed, one could take into account the activational dimensions of regulation, and one could also take into account the polarity dimensions of opposites. Thus for REV functions, one could consider the dimensions of deficit vs. excess (T 10) and could also consider the dimensions of positive expression vs. dimensions of negative expression (the dark side- as in T 9). Moreover, we do not know to what extent there is overlap or coherence of REV functions. Do they develop together, holistically, as intuition might suggest?

 The above questions concern developmental pathways. Up to now, my discussion has been about virtues in general. It seems paradoxical that I have not yet touched on individual differences. Virtues, by definition, deal with individuals and my life as a clinician and educator has been concerned with individuals, both with regards to prevention of disorder and promoting healthy development. So, going forward, we come to an obvious question: how do these early proclivities of social activity and early moral development play out in a virtuous way within individuals? There is some relevant programmatic research in these domains (for example, see Kochanska and Aksan 1995; Kochanska 2002; Kochanska, Aksan, Knaack et al. 2004; Feldman 2007; Tomasello 2009) but, as a field, it must be said that we are at the very beginning of a research enterprise concerning pathways to virtues. In concluding my reflections, therefore, I would like to touch on what seems necessary, although difficult, in tracing individual differences in pathways from ‘proto-virtues’ to virtues, based on what we can garner from research of the past decades.

 1. The holistic study of individuals in context using a developmental systems approach is essential. Individual development is dynamic and what happens with positive inborn features of morality and its pathways is dependent on the nurturing environment. Across development, we know that genes only work with the environment, and epigenetics as a new frontier of science emphasizes context-related changes as well as continuities that need to be taken into account. This is especially so during times of expectable developmental transitions such as we have discussed.

 2. Longitudinal study, well into adulthood, is essential. Existing data sets that assessed personality, health and adaptation of individuals from early childhood through adulthood could be examined for secondary data analyses of interest (for example, the Berkeley Growth Study sample (Eichorn, Clausen, Haan, et al. 1981) and the Terman study sample (Friedman and Martin 2011). What would be useful would be a renewed emphasis on growth-promoting and health-promoting aspects of individuals, as contrasted with risk and resilience. Recent longitudinal data from infancy to adulthood have excited an interest in early bio-markers indicating risk for adult conduct disorder and criminality; even more recent is attention to possible bio-markers for adaptation and health. [[10]](#footnote-10)

3. Understanding virtues in developing individuals requires study from the point of view of polarities and social challenge. Longitudinal study of pathways to virtues necessarily must include what turns moral virtuous people, at any age, to the dark side, and what overcomes such turnings. And social challenge is in the forefront of such turnings. Erwin Staub (1989), in his analysis of the Holocaust and other mass killings of the 20th century, reviews a progression of actions in which individual perpetrators and by-standers have changes in their otherwise virtuous self concept that makes harmful acts possible—so that, for example, REV functions can move to the dark side (with revenge, negative feelings toward others and devaluation of others). Moral constraints are less effective within groups than within individuals. Albert Bandura (2002) in a brilliant and sobering analysis, points to the many psychological mechanisms of moral disengagement that take place in the midst of socially conducive conditions—decreasing both the abilities to behave humanely and to refrain from behaving inhumanely. As he reminds us, “…almost everyone is virtuous at the abstract level…” (p.115); thus in order to maintain virtue, the specifics of social circumstances need to be understood.

4. Studies involving the prevention of derailment of individual pathways to virtue in the midst of adverse circumstances, therefore, deserve more attention. What is now becoming appreciated is that the long term follow-up of infancy and preschool programs for children living in circumstances of extreme poverty, and originally designed to overcome disadvantage in terms of later school readiness, has yielded positive outcomes largely in conduct (for example, less school drop-out, less delinquency, less teen pregnancy, less crime, etc.). [[11]](#footnote-11) Thus such programs may have had more effects on positive potentials for development in terms of fostering individual character skills rather than cognitive skills as Heckman and colleagues have recently argued (Heckman, Pinot and Selvelyev 2013). A great deal more needs to be understood.

 5. Clearly, understanding individual pathways from early childhood must also include studies of virtues in parents, over time. Even more, such studies need to include studies of virtuous relationships (child and parent) over time. Abundant attachment research has documented how parenting that is sensitive to the infant’s emotional needs leads to a sense of security that in turn enables exploration. Beyond attachment, sensitive parenting for moral development also deserves attention, not just for ensuring boundaries for safety and for internalizing constraints and prohibitions but also for enhancing the positive aspects of mastering self regulation and experiencing the social pleasures in exercising the REV functions. Additionally relevant to this essay, is the current attention to approaches that address differing biological sensitivities to environmental context for parents and children both in terms of development in the midst of adverse/stressful environments as well as in the midst of supportive environments that serve to promote positive outcomes and excellence (Boyce and Ellis 2005; Obradovic et al. 2010; Laurent 2014).

**Conclusion: Virtues In Development Going Forward**

 Typically, considering the definition that has guided me, I would think the topic of virtues would bring up the issue of excellence. Is it appropriate to characterize individual moral excellence in the infant, according to the functions we have described? I don’t think so. Too much is uncertain over time, about circumstances and about development itself. My reflections do lead me to the view, however, that there are relevant general implications from what we know. Considering that the human infant is innately provided with positive inclinations and skills for social affectivity and more specifically for reciprocity, empathy and valuation; considering that our evolutionary biology has also provided for related inclinations and skills for intuitive parenting; and considering that we have abundant evidence that these positive inclinations and skills are subject to derailment due to social and environmental adversity—we need to do all we can to combat the latter. Over the course of development through adulthood, we know that even the most positive moral pathways can be weakened or disrupted; early on, therefore, it behooves us to build strong foundations for brain and behavior with respect to all children (Shonkoff, Siegel, Dobbins et al. 2012).

 There *are* virtues in development. Development is future-oriented, and the developmental process provides an inherent basis for virtues, with its increasing organization and emergent open properties, ones that are guided by the foundational principles of regulation. Further development continues throughout life, providing resources for psychotherapy as well as for everyday living (Emde 1990). What is shown in infancy, even before reflective willfulness and speech, continues. It is up to us to make use of what we have been given.

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1. Of course one can appreciate the influence of the environment in their responses—of poverty, immigration disruptions, historical trauma and cultural loss. And also of more direct concerns about gangs, violence, dislocation as well as discrimination, economic and racial. Still, in the mist of this, parents would say: babies and young children hold so much promise—they are giving to us in so many ways and so open. [↑](#footnote-ref-1)
2. Thus from the classical ancient Greek *arête*. I am mindful that my choice of a virtue definition takes me on a somewhat different path for this essay than the overarching Aristotelian *eudaimonia* which in today’s thinking brings an emphasis on living well, happiness and flourishing. [↑](#footnote-ref-2)
3. This definition was agreed upon in 1990 by a consortium of developmental researchers in the MacArthur Network on Early Childhood Transitions that I chaired. Members included Mark Appelbaum, Kathryn Barnard, Elizabeth Bates, Marshall Haith, Jerome Kagan, Marion Radke-Yarrow, and Arnold Sameroff. [↑](#footnote-ref-3)
4. The organization of the brain, as neuroscientists are now coming to recognize, can only be understood as a socially – adapted structure (Gazzanaga 2011); this is also a point of view that fits with some earlier evolutionary-biological perspectives of MacLean (1973) and with current integrative thinking of Narvaez 2008).   [↑](#footnote-ref-4)
5. The concept, as assessed in these scales, has four caregiver components: sensitivity, structuring, non-intrusiveness and non-hostility; also it has two child components: the child’s responsiveness to the caregiver and the child’s involvement of the caregiver. [↑](#footnote-ref-5)
6. Much of this section and the next is modified from Emde 2011a. [↑](#footnote-ref-6)
7. Here we refer to the emotional communicative aspects of empathy; its later developing aspects involving perspective-taking of others and more neuro-cognitive functions have been reviewed by Morelli, Rameson, and Lieberman (2014). Eisenberg, Spinard, and Sadovsky, A. (2006) designate the emotional components of empathy as “sympathy”, reserving the term “empathy” for the integration of its later added cognitive components. [↑](#footnote-ref-7)
8. The other Erikson stages for later development were labeled as industry vs. inferiority, identity vs. role diffusion, intimacy vs. isolation, generativity vs. stagnation, and ego integrity vs. despair. Interestingly, Erikson emphasized that these psychosocial polarities, although ascendant at particular ages, were ones that existed throughout the life cycle as could be represented in a matrix (Erikson 1983). [↑](#footnote-ref-8)
9. Sander, on the basis of his observations, considered the above such a key aspect of development that he proclaimed that another polarity, namely that of engagement vs. adaptive disengagement needs to supplement attachment theory. [↑](#footnote-ref-9)
10. A noteworthy example of the first kind of biomarker is from the population study on the island of Mauritius that began in infancy and showed antisocial outcomes in adulthood that were related to a subgroup with early deficits in fear conditioning (Gao, Raine, Venables, et al. 2010), a feature that links with later studies of adult psychopaths showing reduced amygdala volumes (ref Yates et al.). Possible early bio-markers for health and positive adaptation may be indicated by indices related to exercise physiology (Bortz 2011) and current research with telomere length and telomerase (Epel 2012). [↑](#footnote-ref-10)
11. Outcomes in conduct have resulted in the widely touted cost benefits of these interventions of the 1960,s and 1970’s that provided impetus for the later Head Start and Early Head Start national programs in the U.S. (see summaries in Heckman 2006; Olds, Sadler and Kitzman 2006; Emde 2011b). [↑](#footnote-ref-11)