Commentary

Intersubjectivity, interobjectivity, and the embryonic fallacy in developmental science

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Abstract
Traditional research adopts the embryonic fallacy: the assumption that as soon as life begins, the individual becomes the source of psychological experiences. The embryonic fallacy has resulted in intersubjectivity being treated as ‘a problem’: how can each individual, the source of private experiences, understand the private experiences of ‘self-contained’ others? This ‘problem’ disappears when we recognize that intersubjectivity is regulated through interobjectivity: how individuals understand others arises out of the cultural collective in which they are socialized. The source of our understandings of others is ‘out there’ in the social world.

Keywords
collective processes, embryonic fallacy, interobjectivity, intersubjectivity, socialization

Although different groups of western researchers disagree as to what stage in fetal development human life begins (e.g., George, 2008; Maienschein, 2003), in traditional research it is generally agreed, often explicitly, that the date of the start of life corresponds with the accruing of individual rights, at which stage each person should be treated as an independent entity. Corresponding to the belief that individuals acquire rights at the start of their lives is the belief that the independent individual is the source and center of psychological experiences. This belief has shaped traditional psychological research, so that researchers work ‘bottom up’
from intra-personal processes to understanding social life, at both micro and macro levels.

Developmental scientists have for the most part adopted the *embryonic fallacy*, the assumption that as soon as life begins, the individual becomes the source of psychological experiences. Although lip-service is paid to the ‘relevance of context,’ in the most profound sense traditional research still has not overcome reductionism and a focus on the individual as the independent source of psychological experiences. This point is reflected in discussions about *intersubjectivity*, which I take to mean ‘that different individuals can and often do have different understandings of the world (including things, events and people), and in order to communicate with other individuals, they collaboratively construct an understanding that is to some extent shared’ (Moghaddam, 2003; the idea of a partially shared world has been explored by Rommetveit, 1985, among others).

The *embryonic fallacy* has resulted in researchers treating intersubjectivity as a problem, and as a puzzle that demands a research solution (Bråten, 1998; Diamond & Marrone, 2003; Stephen, 2000; Verhagen, 2005). After all, how can individuals with independently derived subjective worldviews come to understand other individuals with worldviews that are also independently derived and subjective? If each person is the source of their own psychological experiences, then how can individuals understand the distinct experiences of other individuals? These questions remain a puzzle, I argue, as long as the self-contained individual is assumed to be the sole or main source of psychological experiences. According to this assumption, to be effective in inter-personal communications and understanding, individual minds must leap across to other self-contained individuals with other, different, independently derived subjective worlds (Schultz’s, 1967, controversy with Husserl, 1964, reflects this point).

Sammut et al. (2010) suggest that an alternative perspective is reflected by the concept of *interobjectivity*, which I interpret as ‘the understandings that are shared within and between cultures about social reality’ (Moghaddam, 2003, p. 221). My goal in this discussion is to develop further the argument that interobjectivity is the source of intersubjectivity, and that this perspective shows intersubjectivity to be a non-problem. That is, to preview my argument (which students of Wittgenstein, 1953, will find reflects his ‘private-language’ argument, see §§ 234–315 in *Philosophical Investigations*) in summary, how individuals understand other individuals arises out of the worldview of the cultural collective in which they are socialized. The source for how individuals perceive others is ‘out there’ in the social world (in line with Vygotsky, 1978).

The social world is not politically ‘neutral.’ Political thinkers with substantially different views, such as Marx (1979/1852) and Pareto (1935), and also contemporary psychologists exploring political systems (e.g., Jost & Banaji, 1994), agree on the important role of normative systems integral to the social world in sustaining
a political order. Group-based inequalities and the unequal distribution of power and resources require justification and maintenance through a normative system, which includes both formal systems, such as integrated systems of religious beliefs, and less structured sets of rules and norms. For example, such rules and norms regulate behavior between the members of different social classes, ethnic groups, gender groups, and so on.

The fact that normative systems already exist prior to the arrival of individuals, who are ‘thrown into’ the world (Heidegger, 1996), is a profoundly important fact with monumental, and yet mostly overlooked, implications. Prior to Ahmed’s birth into a Muslim Pakistani community living in East London, there already existed the normative system of his heritage culture (Muslim Pakistani living in East London) and that of the host community (mainstream British society). The family and community Ahmed grows up in have a worldview, which includes stereotypes of their mainstream British ‘host society.’ Ahmed grows up influenced by the worldview of his community; his worldview emerges through the prism of his community worldview.

Of course, the fact that normative systems pre-exist our arrival does not mean that we will necessarily adopt the worldview of our ingroup in a ‘wholesale’ manner. First, all worldviews are in a state of flux and there are generational differences, cohort differences, and so on, in worldviews within a population. Second, some individuals do rebel and reject existing worldviews. Each new generation has a tendency to see itself as rebelling against previous generations. However, normative systems have a resilience that transcends rebellions and even revolutions. This is reflected both in the literature on the so-called ‘paradox of revolution’, whereby ‘the more things change, the more they seem the same’ (Middlebrook, 1995), and my own experiences of life in Iran before and after the 1978–1979 revolution (see particularly Moghaddam, 2002, 2008a Ch. 1). For example, as Arjomand (1988) and others have pointed out, it is remarkable how little leader–follower relations changed after the Iranian revolution. Iran continues to be ruled by an all-powerful dictator, previously entitled the ‘Shah’ and now the ‘Supreme Leader.’

My explanation of intersubjectivity and interobjectivity is cultural, normative, and functional. I adopt a ‘cultural’ perspective that gives highest priority to collective constructions of reality that exist prior to the arrival of the individual into this world and with which the individual necessarily engages during socialization processes. Also, my approach is ‘normative’ in that I assume most human thought and action to be regulated by local rules for correct behavior, rather than causally determined by factors inside or outside the person – at least as Aristotle meant ‘efficient’ causation. Finally, I emphasize functionality by arguing that in order to survive, every socio-political order requires psychological citizens with certain characteristics that help sustain the larger system (Moghaddam, 2008b). These points are further elaborated below.
**Intersubjectivity through interobjectivity**

In this part of the discussion, the argument that ‘intersubjectivity evolves through interobjectivity’ is further developed through two related propositions:

1. Normative systems teach individuals particular worldviews, including ways of understanding and communicating with other individuals who are members of different ingroups and outgroups.
2. Through socialization processes, individuals acquire worldviews in such a way that intersubjectivity becomes shaped through interobjectivity.

**Proposition 1: Normative systems regulate the worldviews of individuals**

From a psychological perspective, rather than viewing the embryo as a self-contained being that develops thinking and acting independently and is the source of psychological experiences, it is more correct to view the embryo as a being that learns to think and act through the prism provided by the collective. This process begins before birth, as suggested, for example, by a study on the crying patterns of 3- to 5-day-old French and German newborns (Mampe, Friederici, & Wermke, 2009). The study demonstrated that French newborns cry with rising and German newborns with falling melody contours. The strong implication is that, at least during the last trimester of pregnancy, the human fetus is learning melodic features of the language of the ingroup. As a consequence, the newborn is able to imitate the mother’s melodic contour in her or his crying, which helps in bonding with the mother. Thus, even in the ‘personal’ cry of a newborn infant we can recognize the particular cultural stamp of the ingroup.

From a functional perspective, there are vitally important reasons why prenatal learning should take place. The human infant arrives in the world utterly helpless and remains so for many years. It is only through the support and protection of the ingroup that the individual survives to become an adult and reproduce. The survival chances of the infant increase through the infant arriving into this world already ‘tuned in’ to the language and culture of the ingroup. Not surprisingly, then, newborn infants have already learned to imitate the mother’s melodic contour and to recognize the ingroup language. Newborn French infants and German infants have already learned to cry differently, and they will proceed to learn to think and act through the particular linguistic and cultural lens of their different ingroups.

A first point to clarify is that I am not dismissing the possibility of innate characteristics that are universal, or even ‘innate subjectivity’ (Trevarthen, Kokkinaki, & Fiamenghi, 1999, refer to this as ‘primary intersubjectivity,’ p. 152). But how innate characteristics become effective in behavior is also regulated by the collective. For example, humans may indeed be ‘pre-wired’ for learning languages (Chomsky, 1965), but the particular language(s) we learn to speak
depends on the group into which we are born. Those born into families that speak Mandarin Chinese learn to speak Mandarin Chinese, those born into French-speaking families learn to speak French, and so on. In the case of ‘Genie,’ an unfortunate mistreated child who was barked at but not properly spoken to until she was rescued from an abusive family (she had been tied to the kitchen table and generally treated like a dog), she never learned to become a normal language user (Curtiss, 1977). In this case, the individual’s group influenced her not to ever use language. Thus, even if we accept the Chomskian pre-disposition for humans to learn to use language, it is the group that regulates the ways in which language learning and use actually develops.

Similarly, even if it is true that humans are born with an innate moral grammar, as Hauser (2006) has argued, it is the moral system of the group that regulates how we think and behave morally. Moreover, it is more accurate to conceive of development as an ‘open system,’ where there are no environmentally ‘free’ biological agents possible. Interactions with the environment impact everything, and claims that some behaviors are independent of the environment because they are ‘inborn’ are incorrect. The mapping of moral systems onto genes is nonsensical. Consider, for example, something as ‘elementary’ as morality associated with the wearing of clothes. I was one of many Iranians who rushed back from the West to Iran after the 1979 revolution, to join a society gripped by power struggles between political factions trying to shape the normative system of the emerging post-revolution society. In the first six months or so after the collapse of the Shah’s dictatorship, no one political faction enjoyed a monopoly of power, and this meant that people, including women, had greater freedom to choose the clothes they wanted to wear in public. But after about a year of violent intergroup conflict, the main levers of power became dominated by Islamic fundamentalists.

One of the first priorities of the Islamic fundamentalists in post-revolution Iran was to change the moral order that regulates clothing and self-presentation. Western styles of clothing and self-presentation were attacked as ‘immoral,’ ‘depraved,’ and ‘sinful.’ Women in particular became the targets of such attacks, and it became illegal for any woman older than 9 years to appear in public without the Islamic veil. Men were also impacted by fundamentalist dress and self-presentation rules; for example, wearing a necktie became regarded as a seditious act, and males were forbidden to shake hands with females in public. Consequently, very soon after political power changed hands, there was a transformation of the moral order that regulates self presentation among males and females.

Again, I am not proposing that universals are absent in the moral domain, but even if there are universals, they are not biologically determined independent of the environment. Correspondingly, I am not proposing that morality is completely shaped by context – no behavior is. But there is solid evidence to suggest that human morality has evolutionary roots (Bekoff, 2005) that are reflected in the behavior of lower animals (e.g., Langford et al., 2006), and that there are a small number of universals in moral behavior (Moghaddam & Riley, 2005).
However, there also exist differences in moral behavior across societies; individuals learn moral behavior within and through their cultures, and each of us comes to think and act morally as influenced by our particular cultural upbringing. For example, Morrison, Morrison, and Franklin (2009) showed that even two groups that seemingly are very similar, Canadian and American undergraduate students, were different in their tolerance toward sexual minorities: Americans were higher on homonegativity. This kind of group-based difference is routinely reported on in the traditional cross-cultural literature, a point further developed below.

**Proposition 2: Interobjectivity regulates intersubjectivity**

There is a great deal of research evidence suggesting that the worldviews of individuals are strongly influenced by the worldviews of the groups in which they are socialized. This is reflected by the extraordinary array of between-group differences identified by the traditional cross-cultural literature, as evidenced in the *Journal of Cross-Cultural Psychology* and standard cross-cultural texts (e.g., Berry, Poortinga, Segall, & Dasen, 2002) and handbooks (e.g., Matsumoto, 2001). My argument is that cross-cultural differences arise through socialization processes and reflect the power of collective worldviews to shape individual worldviews. However, traditional research demonstrating cross-cultural differences has a number of shortcomings that we need to keep in mind, and there are foundational reasons to move to alternative cultural approaches (e.g., Shweder, 1991; Valsiner & Rosa, 2007), which bring a systemic focus on how worldviews function.

First, most of the differences identified through cross-cultural research are not behavioral, but involve attitudes, opinions, and so on, as reflected in responses on questionnaires. This focus on ‘talk’ rather than action is also found in alternative cultural research approaches, such as narrative studies of positioning (e.g., Moghaddam, Harré, & Lee, 2008). This point must be given serious consideration because there is a long tradition of research showing that ‘talk’ does not necessarily correspond with ‘action’ (Ch. 4 in Moghaddam, 1998). Second, traditional studies adopt a causal model, whereby independent variables (assumed causes) are manipulated and any resulting changes in dependent variables (assumed effects) are measured. Culture is treated as an independent variable, so that any differences in responses between groups is assumed to be caused by cultural differences.

Cultural psychology (Shweder, 1991) and socio-cultural psychology (Valsiner & Rosa, 2007) have adopted a normative rather than causal model of behavior; they are concerned with *performance style*, the meaning of things (e.g., how a sound is interpreted: ‘Was that the sound of a car backfiring or a gunshot?’), rather than *performance capacity*, how effectively we perform certain actions (e.g., whether or not our auditory apparatus enables us to hear a sound: ‘I didn’t hear anything, so it can’t have been something as loud as a gunshot’) (Moghaddam, 2002). According to this alternative perspective, human thought and action is regulated (not caused) by norms, rules, values, and other features of the normative system. There are
alternative normative systems available, and individuals have some measure of choice as to what normative system they will follow.

But despite the foundational differences between causal and normative models of behavior (Moghaddam & Studer, 1997), research from both traditions demonstrates that there are important differences in thought and action across cultures.

Third, traditional studies tend to rely on a very narrow sample of humanity. A recent study demonstrated that since the 1980s there has been an increase in the percentage of traditional cross-cultural studies using undergraduate students as respondents (Moghaddam & Lee, 2006). In low-income societies, students belong to the modern rather than the traditional sector of society, the modern sector being more affluent, urban, better educated, more westernized, and more fully integrated into the global economy (Moghaddam & Taylor, 1985). The universities and particularly psychology departments of low-income societies model themselves after western institutions, with little regard for the appropriateness of what is being copied but with priority being given to producing students that meet western standards (Moghaddam & Taylor, 1986). Given the many important similarities in student lifestyle around the world, it is even more remarkable that so many cross-cultural differences are being reported in traditional research using undergraduate students as respondents. The implication is that if traditional cross-cultural research studies did include samples from the traditional sectors of low-income societies, they would discover even greater differences across cultures.

A fourth weakness of most ‘cultural’ research is that ‘culture’ has been taken to be synonymous with ‘country’; Cohen (2009) is correct in calling for attention to many more forms of culture, and specifically he discusses literature that demonstrates differences across religions, socioeconomic status, and region of country.

Finally, and perhaps for the purpose of the present discussion most importantly, traditional cross-cultural research focuses on the ‘outcomes’ of socialization processes, and neglects the issue of process and meaning: when and through what processes do cultural differences arise and, vitally, what do such differences mean in terms of the relationship between intersubjectivity and interobjectivity? For example, from the ‘new look’ research of the 1950s (see Bruner, 1973) to 21st-century research (e.g., Snibbe & Markus, 2005), evidence suggests that lower-class individuals differ from middle-class individuals in terms of perceptions, reactions to failure, and some other social styles of thinking and doing. When and how do such differences arise, and what implications do these processes have for our understanding of the relationship between intersubjectivity and interobjectivity?

It is particularly with respect to process and meaning-making that socio-cultural (Valsiner & Rosa, 2007) and cultural (Shweder, 1991) approaches, as well as the various developmental (e.g., Gregg, 2005) and narrative-based studies associated with them (e.g., Moghaddam et al., 2008) have an advantage. For example, in his cultural psychological study of the Middle East, Gregg (2005) maps out the life-span-developmental processes through which individual thinking and action takes shape. In this process, the worldview of the individual Arab Muslim is powerfully
influenced by the worldview of the larger society. For example, how individual males and females view members of the opposite sex and how they enter into sexual relations are shaped by the dominant normative system. For males, the first opposite-sex sexual encounter is likely to be with a prostitute (Gregg, 2005, p. 276). Although ‘hunting’ girls is a routine ritual among young males, any girls who respond to male approaches would be considered as ‘dishonorable and not worthy of marriage’ (p. 278). Correspondingly, young females regard ‘being hunted’ as dangerous and repugnant; they must be virgins when they marry, and males chasing them raise the possibility of their being ruined and shamed. Such huge differences in the sexual standards for the two sexes shape the perceptions and actions of individual males and females through a developmental process that begins at least at birth.

When we ask, ‘How does a traditional Arab Muslim young female come to understand a traditional Arab Muslim young male?’, the answer is, through the prism of a shared culture. Males and females share understandings about social reality, and these understandings are to some degree common both within and across gender groups. Individual understandings arise out of the shared collective understandings—the normative system that regulates behavior in a society.

In this way, the normative system is the main source of our psychological experiences. Each individual assimilates particular normative systems through socialization processes, in large part by learning language(s). In a sense, society ‘enters into’ each individual, and the psychological experiences we have are through this ‘entering.’ Many of the assumptions that we take on through this ‘entering’ are never questioned; they are the moral ‘hinges’ (Wittgenstein, 1972) or contingent universals (Shweder, 1991) that help the smooth workings of the social world.

**Conclusion**

Intersubjectivity has been viewed as ‘a problem’ because the source of psychological experiences has been seen to be inside individuals. As long as we cling to a view of psychological experiences as arising out of private, self-contained cognitive activity, it is a puzzle as to how we can understand others, who presumably also have private, self-contained cognitive activities giving rise to private, subjective experiences. By recognizing that thought and action are regulated by normative systems, and that the source of psychological experiences is ‘out there’ in the social world, ‘the problem’ of intersubjectivity disappears.

**References**


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