

son for this vulnerability; hermeneutic charity diminishes. A gesture slightly out of place gets amplified and the interaction soon falls again into an antagonistic configuration. Understanding emotions intersubjectively is not only about figuring out how they are learned, but also how they are shaped and constituted by something beyond the sum of individual subjectivities, in this case, by the interactive patterns themselves.

Through the constitutive power of joint enactments, emotions develop beyond individual affectivity. Mascolo hints at this possibility with the example of the little girl who experiences her mother's anger, and through this experience better understands terms like "being mad." What is interesting here is not that these experiences (the mother's actions and expressions) inform an individual agent (the little girl) in a social context. What is interesting is that when mommy is "mad," this makes the child feel a certain way, a feeling that goes together with her growing grasp of the meaning of anger. An emotion has many sides. Feeling the anger of others directly, without cognitive mediation, is itself an emotion that shapes our understanding of anger. It *moves* our bodies into learning or enacting anger-related know-how.

Notice that if we adopt the relational perspective, then it is more than a match between vocabulary, felt experiences, and overt behaviors that is shaped intersubjectively. Not only do I learn about anger by interacting with angry people, but I also shape the development of my capacities to feel, understand, and manage anger in this process. I regulate emotions through interactive skills, involving actual or vicarious others, norms embodied in reenacted voices and injunctions that I address to myself. By developing socially enabled emotional regulation, I can bring to the fore the experience of new feelings. I can become educated into feeling emotions I may not have felt before, or were too fleeting in my experience to deserve a name. Or I may learn their name and their corresponding behaviors and expressions before I truly experience them. I may actually learn to experience them because I have learned about them. New developmental possibilities open up; others close. I can become skillful at empathy as a result of acts of solidarity and forgiving, or I can engage in practices and discourses of systematic empathic de-skilling that brutalize me and make me forget sensitivities I once mastered. I develop differently as a consequence of my emotional skills and acts. The changing structure of emotion affects its own development.

By placing emotions in their relational, developmental, and intersubjective dimensions, we move closer to understanding their ontology. One can always ask: why would modes of engagement need to be felt at all? Since humans are unfinished

creatures (Di Paolo, 2020; Di Paolo et al., 2018), we can propose that emotions are ways of regulating the tensions between processes of individuation, between sedimented history and current situation, and between the powers and constraints that affect our ceaseless becoming as organic, sensorimotor, intersubjective, and linguistic bodies. Here, enaction resonates with the philosophy of Gilbert Simondon (2005). The interiority that emerges through the individuation of our bodies is a space of tensions between individuated organization and preindividual potentialities, and between bodies and milieu. Affectivity is how we attempt, and sometimes fail, to regulate these tensions, a way our bodies feel and affect themselves in their open materiality. Waves of affect are organized into emotions, a *knowing-how-to-become* that we *develop* in contact with others.

From simple checks in everyday activities, through the anxiety of not always coping, to the birth pangs of self-transformation, next time you undergo an emotional episode you may notice yourself becoming yourself.

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## Comment: Collective Epistemic Emotions and Individualized Learning: A Relational Account

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## Abstract

This comment considers some potential implications of both the appraisal approaches and the framework proposed by Mascolo in regard to a mechanism that is particularly important for development: learning. More specifically, I discuss Mascolo's account of emotion with respect to how appraisal processes can be considered relational, automatic, social, as well as the drivers of learning amplification.

## Keywords

concern-relevance, epistemic emotions, learning, social appraisal

Understanding emotional development is both an important research endeavor in itself and a crucial way to constrain theories of emotions (see Dukes, Samson, & Walle, in press; Pollak, Camras, & Cole, 2019). Mascolo (2020) proposes a framework aimed at understanding how emotions develop, with a particular focus on the development of anger. The proposed framework is also aimed at orienting theories of emotion toward strong relational and social accounts of emotions. In doing so, Mascolo adopts an approach that shares key aspects with appraisal theories, for instance, the notion that emotion is a multicomponential system and that it is typically elicited by the processing of a motive–event relation between an organism and the world (e.g., Sander, Grandjean, & Scherer, 2005, 2018). With a focus on the social dimensions of emotion and on intersubjectivity, Mascolo explores ways in which theories of emotion could remain rigorous and include more systematic analyses of the *feeling* component of emotion, without relying on self-reports but rather on expressions during social interactions. This comment considers some potential implications of both the appraisal approaches and the framework proposed by Mascolo in regard to a mechanism that is particularly important for development: learning. More specifically, we discuss Mascolo's account of emotion with respect to how appraisal processes can be considered relational, automatic, social, as well as the drivers of learning amplification.

## Relational, Automatic, and Social Appraisals

Although specific definitions of emotion vary across disciplines and approaches, Sander (2013) proposed that the field may have reached a consensus in globally defining an emotion as an event-focused, two-step, fast process consisting of (a) relevance-based emotion elicitation mechanisms that (b) shape a multiple emotional response (i.e., action tendency, autonomic reaction, expression, and feeling).

Appraisal theories of emotion would further expand this definition by considering that the elicitation mechanisms are a series of appraisal processes that are relational (Lazarus, 1991) and may operate automatically (see Moors, 2010), even when social information is integrated during these context-dependent appraisals (see Mumenthaler & Sander, 2015). If appraisal, including social appraisal, can operate automatically, then it can certainly contribute to the many developmental stages described

by Mascolo, without the need to differentiate between higher order appraisals versus the more basic idea of motive–event relations when considering how event significance (i.e., primary appraisal) is **processed** (Mascolo, 2020). Expressions, such as those discussed by Mascolo in the 11 examples of anger, are the social signals observers typically use to attribute a feeling to a person who expresses an emotion. Moreover, they guide specific behaviors of the observers at various ages (Walle & Campos, 2012). Emotion recognition is an emotional competency that strongly develops with age (see Widen, 2013) and is sensitive to many contexts of development, such as early life adversity (e.g., Pollak, Messner, Kistler, & Cohn, 2009) and maybe even to school pedagogy (Denervaud, Mumenthaler, Gentaz, & Sander, in press). It seems to me that the appraisal framework—when automatic and social appraisals are included—is well equipped theoretically to explain how emotions are not only elicited but also recognized in a social-sensitive way (e.g., de Melo, Carnevale, Read, & Gratch, 2014; Mumenthaler & Sander, 2012; Mumenthaler, Sander, & Manstead, 2020).

## Collective Epistemic Emotions

Some emotions such as interest, confusion, surprise, admiration, wonder, or awe relate so strongly to knowledge and knowing that they have been called epistemic emotions (see e.g., Candiotti, 2019; Silvia, 2010). How does a given topic elicit strong interest in an individual but only low interest in another individual? This question has been extensively studied in relation to learning and development (see e.g., Hidi & Renninger, 2006). A recent complementary approach to this question is the one suggested by Clément and Dukes (2019), who developed the notion of affective social learning. The idea is that there are processes subserving the transmission of information between individuals about how to value a particular object. In this regard, social appraisal is a process that contributes to affective social learning. For instance, a person may feel and express stronger interest in a given topic if other individuals in his or her social group also feel this emotion for the same topic. The emphasis Mascolo (2020) puts on emotions being coregulated between individuals is inspiring with respect to how teacher–learner interactions may contribute in generating what one may call collective epistemic emotions (e.g., in a classroom). An example of such a collective epistemic emotion could correspond to student(s) and teacher(s) simultaneously sharing the emotion of interest in a given topic and being aware that they share this emotion. Going beyond the idea that emotional climates may emerge through emotional contagion, future research may consider how Mascolo's perspective can indeed reinforce the study of the actual mechanisms underlying the emergence of collective emotions (see Goldenberg, Garcia, Halperin, & Gross, 2020; von Scheve & Ismer, 2013). In particular, further research may study how collective epistemic emotions develop in infancy and childhood to encourage exploration and learning.

## Concern-Relevance and Individualized Learning

The relational aspect of emotion highlights the role of primary appraisal in emotion elicitation: only those specific events that are relevant for the major concerns (including goals, needs, and values) of the individual elicit emotions. While the idea that emotion modulates many cognitive mechanisms is acknowledged by virtually all theories of emotion, it is still highly debated which specific dimensions or components, such as valence, arousal, feeling, or appraisal, cause these effects. The idea that concern-relevance orients attention (Pool, Brosch, Delplanque, & Sander, 2016) and facilitates episodic memory (Montagrin et al., 2018) and Pavlovian conditioning (Stussi, Ferrero, Pourtois, & Sander, 2019) is consistent with the way Mascolo concludes that “The motive-relevant assessment . . . evokes affect which selects this event, amplifies its importance, and organizes it into consciousness” (2020, p. 214), but also highlights the idea that there could be direct effects of appraised concern-relevance on several cognitive mechanisms. With respect to learning, this model predicts that areas that are particularly concern-relevant (e.g., correspond to a specific domain of interest) may elicit emotions (e.g., epistemic emotions) and facilitate learning (e.g., about new knowledge). Therefore, concern-relevance could be a driver of individualized learning during development. Results suggesting that children’s interest in different natural categories shapes their word learning (Ackermann, Hepach, & Mani, 2019) are consistent with this prediction.

In conclusion, it is inspiring that Mascolo (2020) describes the concept of engagement as inherently relational, and as implying the investment of multiple organismic systems in activity that matters to the person. With this framework of engagement, further experiments could study the conditions under which individuals at different levels of development get engaged in learning. With the measurement difficulties that it entails, a challenging research area could be to study the effects of appraised concern-relevance on individualized learning, and whether such effects could increase with the synchronous emergence of a collective epistemic emotion.

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