

## Chapter 2

# From Cognitive to Cultural Theories of ‘Distribution’: A Creativity Framework

### 2.1 Extending the Mind in Cognitive Science

The discussion of creativity as distributed action advanced in this book resonates with wider developments taking place in cognitive science and the philosophy of mind. In fact, the hypothesis that the human mind might be ‘extended’ into the world instead of simply being brain or organism-bound (Clark 2008) is a relatively recent advancement. It emerged as a reaction to the radical reductionism manifest in many past (and present) models of the mind as a machine located inside our brains (see for example LeDoux’s 2002, synaptic self theory but also Glannon’s 2009, article ‘Our brains are not us’). In a 2013 volume entitled ‘Cognition beyond the brain’, Vallée-Tourangeau and Cowley note the fact that “as recently as twenty years ago, many would have regarded it as absurd to examine thinking with reference to events beyond the brain” (p. 1). Although this might seem to be a fairly new debate, its roots can be traced back to turn of the century psychology (for instance, in the work of Munsterberg, 1914, cited in Cole and Engeström 1993) and in the first cybernetic and systemic models proposed in the discipline (see Bateson’s 1972, seminal book ‘Steps to an ecology of mind’). However, most of these ideas were only partial if at all integrated by cognitive scientists. Their reaction to behaviourism was to argue for the importance of the “internal mental environment largely separated from the external world” (Hutchins 1995a, p. 371), to endorse the computer metaphor and make information processing central for human cognition. Within this framework, cognition ended up consisting basically of manipulating representations inside the heads of individuals (Varga 2013), a view that left culture, context, history and affect on the side, to be dealt with at a later point (Gardner 1985).

The time for integrating these forgotten aspects—all constitutive of cognition itself—is long overdue and a solid critique of the ‘mind in the head’ account is currently being built within cognitive science and beyond. There are multiple lines of ‘attack’, most often in dialogue with each other, that today take the shape of *embodied, embedded, enacted, extended and distributed theories of cognition* (for details see Rowlands 2010). For an orderly presentation I will proceed by following Cash’s (2013) description of three main ‘waves’, namely (a) the extended

mind, (b) the integrationist approach and (c) socially and culturally distributed cognition, and briefly discuss their strengths and limitations.

In 1998, Clark and Chalmers wrote a thought provoking article starting from the question “where does the mind stop and the rest of the world begin?” (Clark and Chalmers 1998, p. 7). They rejected the skin and skull as ‘natural’ borders of the mind but also didn’t agree with a completely externalist view. What the two advocated for was an active externalism “based on the active role of the environment in driving cognitive processes” (p. 7), in other words, an *extended mind*. Key to their argument is what they termed the parity principle, stating basically that any part of the world that functions as a process which, were it to go on inside the head, would be clearly recognised as cognitive, should in fact be considered integral to our cognition; e.g., information in a notebook can be an obvious instance of ‘external’ memory. How do we test whether the part of the world in question is integral to cognitive processes? If we consider humans and entities external to them, like the notebook mentioned above, as a coupled system, then we only need to remove the external component and notice if there is any drop in behavioural competence. Trying to anticipate criticism, Clark and Chalmers stated that, while cognition may extend outside of the head, it does not mean that consciousness does so as well. But the critical point to address for them was how strong is the coupling between organism and external instances since, unlike parts of one’s brain, we can connect and disconnect from objects in the world. In an effort to support their hypothesis, Clark later (2008) discussed several criteria that end up limiting what can be considered as truly ‘part’ of the extended mind; for example, an external resource should be readily available and information from it more or less automatically endorsed by the person.

However, even with these clarifications, the theory of the extended mind remains controversial for mainstream cognitive scientists whose initial reply was that “there is no room for an expanded psychology, no motivation for it, and no need for it” (Butler 1998, p. 222; also Rupert 2010). The spectre of ‘cognitive bloat’ or over-extension of human cognition is a constant source of worry, leading authors such as Adams and Aizawa (2009) to write about ‘Why the mind is still in the head’. The conflict between ‘internalists’ and ‘externalists’ encouraged authors like Menary (2006) to propose the idea of *cognitive integrationism*, a perspective that considers internal and external vehicles and processes part of an integrated whole (the hybrid mind thesis). According to it, external resources do not duplicate in-the-head processes, like argued initially, but rather augment and complement them (Cash 2013). Confronted with similar critiques, ‘second wave’ theories of the extended mind have nevertheless attracted a great deal of attention in recent years and some efforts to elaborate them further are on the way. A special issue of Cognitive Systems Research, aiming to socialise the extended mind (see Merritt et al. 2013), is a clear example in this regard. Researchers are currently trying to understand the ontogenesis of this phenomenon (Krueger 2013) and link it to other areas like ecological psychology (see Keno 2010). From time to time, even more daring formulations are being proposed, such as hypothesising the existence of a ‘collective mind’ (Tollefsen 2006).

The developing orientation within the extended mind literature towards emphasising social and cultural elements is noteworthy. Clark, in his formulations of the theory, focused much more on concrete objects while failing to do justice to the intricate socio-cultural system of norms, beliefs and practices these objects are part of. The work of Gallagher (2013) makes some key steps in the direction of socialising the extended mind and recognising the role of institutional structures. Finding classic accounts too conservative, he is critical of the fact that mental processes ‘out there’ are still limited to the kind of things that fit a standard cognitive model. His idea of ‘mental institutions’ or institutions that not only help us accomplish cognitive tasks but make them possible, is certainly interesting, as well as the examples he takes, such as the legal system. Gallagher’s argument is that:

If we are justified in saying that working with a notebook or a calculator is mind-extending, it seems equally right to say that working with the law, the use of the legal system in the practice of legal argumentation, deliberation and judgment, as well as the cognitive processes involved in the enforcement of law for purposes of controlling behavior are mind-extending too (Gallagher 2013, p. 7).

Perhaps the most elaborate account of how mind and culture are integrated within a broader system is represented by Edwin Hutchins’s seminal contribution to ‘third wave’ theories of *distributed cognition*. His ethnographic study of navigation on the US Navy ship nicknamed Palau, described at length in ‘Cognition in the wild’ (see Hutchins 1995a), captured the multiple ways in which cognitive tasks (e.g., determining the ship’s position as part of the ‘fix cycle’, planning its course, etc.) are never performed by individuals in isolation but in relation to other people and close interaction with the material world. What emerged was a clear view of cognition as a cultural process, a “social distribution of cognitive labor” (Hutchins 1995a, p. 228). Beyond this empirical work, Hutchins has also been at the forefront of developing the theory of distributed cognition, drawing on multiple fields such as Russian cultural-historical activity theory, Gibson’s ecological psychology, and Bateson’s ecology of mind, among others. His recent focus on cognitive ecosystems (Hutchins 2010) promotes the study of cognitive phenomena in context as part of dynamic patterns of inter-relation between elements organised as socio-technical systems (Hutchins 1995b). Moreover, Hutchins also advocates for a broader understanding of cognition that integrates perception and action, with the products of their interaction accumulating “not only in the brain but throughout the cognitive ecology” (Hutchins 2010, p. 712). His discussion of how a cockpit remembers its speed is illuminating in this regard, literally taking memory outside of the head of single individuals and distributing its functions within the environment, particularly in relation to physical tools (Hutchins 1995b). This line of research into memory and remembering continues to be central to the field of distributed cognition (see for example Sutton et al. 2010; Michaelian and Sutton 2013).

In conclusion, theories of the extended mind and distributed cognition are of concern for cognitive scientists although a general consensus is not yet in sight.

Even within the group supporting these efforts to contextualise and situate cognitive functioning, different understandings apply. There is, for instance, a difference between distribution understood in a 'weaker sense' (as a metaphor for coordinated social activities) and in a 'stronger' one (in which external elements are intrinsic to the cognitive architecture) (see Perry 2013). Whatever the version adopted, there are still many critical voices, either promoting a more traditional, 'internalist' perspective, or on the contrary, trying to promote a flexible framework. Others, like Poirier and Chicoisne (2006), criticised both 'conservative' and 'liberal' interpretations that "illegitimately impose sharp readings on two fuzzy concepts: distribution and cognition" (p. 217) and argued we should recognise and deal with the vague nature of our key constructs. They also considered the sharp contrast between the cognitive and non-cognitive to be generally misleading and explored the many instances in-between (e.g., systems can be minimally or highly cognitive). Other authors, such as Salomon (1993), pointed to the fact that theories of distributed cognition need in fact to reflect more seriously on the (supposedly many) cases of non-distribution. Finally, Giere (2007) made a distinction between distributed cognition and distributed knowing, agreeing with Clark and Chalmers's (1998) remarks about consciousness not extending into the outside world.

Overall, many would accept Kirsh's (2006, p. 250) observation that "we need better theories of how people are embedded in the world as well as better theories of how the world and the larger systems we are part of coordinate action". In the next section, cultural psychology will be used as a theoretical framework to further our understanding of distribution and, within this perspective, a model of distribution creativity will be introduced. Before that however, and in order to help us differentiate cognitive from cultural approaches, I will systematise what for me seem to be the *main challenges and limitations* of the cognitive account, namely: (a) the pervasive dichotomy imposed between the inner and outer world; (b) the extension of the vocabulary of mainstream cognitive science into the cultural sphere and (c) the essentially static, non-developmental perspective on distribution and the mind.

For Button (2008), considering distributed cognition a new theoretical outlook that promises to bridge cognitive science and socio-cultural perspectives is highly misleading due to the fact that distributed cognition is, actually, cognitive science; it "does not renounce cognitive science; it actually extends it by describing social phenomena in a redundant cognitive vocabulary" (Button 2008, p. 89). For him this approach should be dismissed on the grounds of operating a sharp separation between the 'inside' and the 'outside', an old Cartesian split between the 'ghost' and the 'machinery' of the world. Even integrationist views that should overcome this dichotomy still keep the distinction between brain and world and the same applies to distributed cognition. Take for instance Zhang and Patel's (2006) discussion of affordances as distributed representations existing across the environment and the organism. They argue this by constantly referring back to internal and external representational spaces. To begin with, such distinctions are not productive because they invite controversy over what is 'inside', what is 'outside', and where we should draw the line. In reality, there is no fixed line to be drawn

since, as Bateson (1972, p. 464) reminds us, “the delimitation of an individual mind must always depend upon what phenomena we wish to understand or explain”. Lines can also cut through pathways of connectivity that make organism and environment a functional totality (one should think here about Bateson’s example of the blind man using a stick). Moreover, the nature of any boundary should be problematised further. Instead of being conceptualised as a limit and point of exclusion, boundaries represent in fact dynamic areas of contact, oscillatory and indeterminate at the same time (Neuman 2003, p. 99). Unfortunately, such ideas are far from what cognitive scientists are preoccupied with when trying to delineate the ‘proper’ locus of cognition.

Even more problematic is the fact that, once the ‘inside’ and ‘outside’ (or, as a variant, the cognitive and non-cognitive) are separated with the help of more or less constraining criteria, the way in which extension or distribution are dealt with is to claim, similar to Hutchins (1995a, p. 354), that cognition is a cultural process and culture (or a ‘major component’ of it) is a cognitive process. While the first part of this statement can be supported by a series of arguments regarding the development and expression of our cognitive functions, the latter opens the door for a disembodied discussion of culture (as disembodied as mainstream theories of mind tend to be). Let’s take Clark and Chalmers’s (1998) example of rearranging tiles on a Scrabble game tray to create words. They claim that such action is not external to cognition by invoking the parity principle mentioned before. Where does this line of reasoning lead to? The conclusion that, “in a very real sense, the re-arrangement of tiles on the tray is not part of action; it is part of *thought*” (Clark and Chalmers 1998, pp. 9–10). From a computational approach to the human mind we are now close to describing cultural processes in terms of representations, information and, ultimately, computation. If processing takes place both inside and outside a person’s head and the socio-cultural world is a cognitive system (Toon 2013), then what are we to do with materiality, history and the affect-laden nature of the world we live in?

Finally, perhaps the most important line of critique points to the fact that cognitive scientists tend to focus on the wrong questions about mind and environment. Typically, they are concerned with what are the limits of cognition and where does the mind end. These questions can only be answered in a non-developmental manner (Valsiner 1997), ready to ‘freeze’ person and world in time, to make them static in order to draw all the necessary separation lines. If we are to consider things developmentally, in constant change due to their interactive dynamics, the need to operate with a strict division between ‘internal’ and ‘external’ vanishes: these ‘spaces’ are co-constitutive and permeable. The main way to account for the temporality of this constant exchange between person and world is to take human action or activity as a unit of analysis. This is not a novel proposal as several authors already pointed to the centrality of this concept for the socially extended mind. For instance, Gallagher (2013) noted that the mind is constituted by a series of activities, “whereas the concepts of propositional attitudes, mental states, representations, vehicles and even non-derived contents are derivative and are inexplicable except in reference to such activities” (p. 11). This is an old idea in cultural

psychology, for which symbolic or mediated action stands at the core of human existence within culture. From this standpoint, to think or to remember is *to do*, and, “unlike computers that *only* sit and think, people think while playing, working, creating art, and talking with one another” (Scribner 1997, p. 355).

## 2.2 Distribution in Cultural Psychology

The relationship between ‘mind’ and ‘culture’ emerged as a prominent topic in psychology during the 1980s (see Jahoda 1992), and its study remains today one of the most rapidly expanding areas in the discipline. Breaking down the dichotomy between ‘inside’ and ‘outside’, this perspective promotes a view of mind and culture as *co-constitutive* (Rogoff 2003). In the words of Richard Shweder, this branch of psychology studies “the way cultural traditions and social practices regulate, express, transform, and permute the human psyche, resulting less in psychic unity for mankind than in ethnic divergences in mind, self, and emotion” (Shweder 1990, p. 1). Instead of boundaries between mind and culture, cultural psychologists support a developmental and systemic outlook that focuses on integrated wholes, as they are presented in everyday experience, rather than analytically derived parts. Similar to figure and ground, person and context are defined by their inter-relation at all times. This means that, more than being inseparable, people and their world require each other (Markus and Hamedani 2007, p. 3); it does not imply, however, that cultural psychologists do not distinguish between person or psychological phenomena and the wider environment. Valsiner (1997, pp. 23–24) introduced the useful distinction in this case between exclusive and inclusive separation. The first segments phenomena from their context and eliminates the latter as irrelevant. Such a strategy is often found in mainstream cognitive science. On the contrary, inclusive forms of separation acknowledge the difference but retain a view of the phenomenon *in* context. This is the standpoint of cultural psychology.

In essence, to study psychological and cultural processes from this perspective requires the researcher to consider them distributed across people and contexts. Geertz (1973, p. 46) famously referred to the human being as “an incomplete, unfinished animal”, in need of a cultural environment. Indeed, thinking, remembering, feeling, wanting, and, as we shall see later on, creating, depend on things ‘outside’ the body of individual organisms. Culture, as an accumulation of artefacts during historical time, is the human-specific medium of development (Cole 1996, p. 110). Its location is neither the external environment nor is culture captive in the mind of the person, but occupies precisely the symbolic space *in-between* person and his or her world (Winnicott 1971). A historical account of the development of cultural psychological thought leads us back to thinkers whose ideas are instrumental for current debates about distributed cognition, among them the writings of Wundt, Vygotsky, Luria, Leontiev, and Dewey (see Cole and Engeström 1993, for details).

At the core of cultural psychology stand *meditational* models that relate person to others and to artefacts (both material and symbolic). Our cultural experience in the world is thus defined by interactions with other people and the use of tools and signs, regulating our actions. In this sense, the person never thinks or acts outside of this intricate and dynamic system of social, material and institutional relations that make up human society. Drawing on various disciplines, from anthropology, sociology and linguistics to history and the medical sciences (Valsiner and Rosa 2007), researchers dedicated to this orientation strive to formulate a truly ‘culture-inclusive psychology’ (Cole 1996) which does not consider the socio-cultural environment as a set of variables external to the self—a common assumption in cross-cultural psychology. The socio-cultural paradigm, with its focus on systematic, interactive and mediated phenomena (Zittoun et al. 2007), considers cognitive distribution a developing, unfolding process that takes place both on a larger time scale (that can include the historical trajectory of different tools or symbolic forms), and within micro moments of interaction (for example in the process of learning a group’s cultural repertoires and practicing them). Activities of meaning-making and the co-construction of knowledge are both a constant outcome of distribution and its engine, facilitating new forms of ‘extension’ of the individual towards the assimilation and transformation of culture. In this way, “mind emerges in the joint mediated activity of people” (Cole 1996, p. 104) and the same can be said about culture.

In fact, the key to a cultural psychological approach to distribution is represented by *action or activity*, two central concepts within the discipline. Their role is so central that authors like Wertsch defined the whole field in these terms: “The task of a sociocultural approach is to explicate the relationship between human action, on the one hand, and the cultural, institutional, and historical contexts in which this occurs, on the other” (Wertsch 1998, p. 24). Moreover, for Ratner (1996), psychological phenomena are seen as grounded in concrete, practical social activities where both parties depend on and sustain each other. Unlike psychology’s long-lasting fascination with behaviour, cultural psychologists prefer to focus on action as it captures better the symbolic and goal-directed nature of our relation with ourselves, others and objects. Behaviour can be studied in a de-contextualised manner but human action is necessarily ‘situated action’ (Bruner 1990, p. 19; also Ginsburg 1980), shaped by the intentional states of the participants and the normativity of culture. Most of all, action articulates the behavioural and the intra-psychological and engages with the materiality of the world. In the words of Wertsch et al. (1995):

this is not to say that action does not have a psychological moment or dimension. It clearly does. Even action in its most mundane motor form has its psychological dimension. The point is that we should think of this as a *moment* of action rather than as a separate process that exists somehow in isolation (pp. 10–11).

It is easy to see how action ‘extends’ the person into the world and relates it to others and objects in its unfolding within irreversible time, but what about ‘internal’ acts or those acts that have very little behavioural expression? What



about thinking and remembering, to return to the classic focus of cognitive theories? First of all, the *act* of thinking, remembering, or imagining is never taking place completely inside the head as these processes always find ways of being articulated and externalised, even if not immediately. But, more fundamentally, these 'inner', cognitively driven acts are distributed because they are culturally mediated by semiotic systems such as language. As rightfully noted by Fusaroli et al. (2013), language is a relational phenomenon and, in this sense, a completely 'private' language is inconceivable. It is not only the case that we learn language from others, we direct it towards others (or towards the self as other), and we use it to coordinate action, but words are symbolic means that have an 'external' referent, they mediate the relation between the person and something else, outside of it. Our minds are, according to these three authors, dialogically extended and, I would add, dialogically extended through (symbolic) action.

Lev Vytosky (1978) is credited as one of the first psychologists to place mediation at the core of his thinking about psychological phenomena and to stress the role of signs for human activity and the role of other people in acquiring and using these signs. However, the person is never a passive recipient of 'external' influences. On the contrary, "cultural mediation has a recursive, bidirectional effect; mediated activity simultaneously modifies both the environment and the subject" (Cole and Engeström 1993, p. 9). Wertsch et al. (1995) consider, in this regard, mediation as an active and transformative process. This is because, while cultural artefacts have the potential to shape action, they are not capable of determining it in a mechanistic way. It is the person's use of mediational means that actualises their potential within concrete contexts of interaction. Moreover, introducing new cultural tools leads to transformation and this is clearly seen in activities of learning throughout the life-span. But mediation is not all about empowering individuals or groups, it can also be constraining for action which is something that, paradoxically, emphasises its fundamental openness in relation to the future (since without constraints there would be no freedom). Finally, Wertsch and colleagues refer to the existence of 'spin-off' effects when tools that emerged for another reason are used to mediate a different type of action, leading to unanticipated uses. Concluding about mediation in cultural psychology we can agree with Cole and Engeström's (1993, p. 42) observation that, "when one takes mediation through artefacts as the central distinctive characteristic of human beings, one is declaring one's adoption of the view that human cognition is distributed".

Before ending this short presentation of cultural psychological theory and its relevance for our understanding of distributed psychological functions, I would like to highlight the need to avoid two kinds of misconception. First of all, this perspective is not against or does not aim to deny the role of the brain for cognition and action in general. Displacing the brain from the centre of our focus when it comes to the mind does not mean doing away with it altogether but rather dispelling the idea of a unique, singular and contained centre of human activity. Essentially, my view on this issue is in line with Glannon's (2009, p. 329) statement that "the brain is not the sole cause of the mind but a relational organ that shapes and is shaped by the mind in mediating interaction between the



embodied subject and the world”. On the contrary, to focus exclusively on the social world risks leading us to yet another form of reductionism, this time of a socio-cultural kind. In this regard, I subscribe to Valsiner’s (1997) inspired theses of ‘bounded indeterminacy’ and ‘independent dependence’, phrases that capture both the agency of individuals as well as their reliance on environmental circumstances. These concepts open new ways of thinking about creativity since the creative process itself is, at once, free and constrained and, more than this, it requires dependence (immersion) in order to gain independence (detachment) as part of the continuous cycle of experience.

While I have focused so far on the general debate about mind and its distribution within culture, it is now the moment to return to the topic of creativity and notice, together with Poirier and Chicoisne (2006, p. 217) the fact that “truly distributed cognition is emergent cognition”. In other words, creativity is a natural outcome of distribution and, in addition, theories of distribution would benefit greatly from focusing on the case-study of creative expression. This will be argued more eloquently in the next chapters but, for the time being, let me emphasise the fact that a distributed model of creativity deals necessarily with creative action. The broad definition I start from in this regard is that “*to create is to act in the world, or on the world, in a new and significant way*” (Mason 2003, p. 7). In line also with a pragmatist understanding, the next section will elaborate a theoretical model that centres on the creativity of action rather than that of people or products. As Joas and Kilpinen (2006, p. 323) conclude, “individuals may also be creative, but this is due to the creativity of their action rather than vice versa”.

## 2.3 Distributing Creativity, a Theoretical Framework

There are many grounds on which to claim that creativity is distributed action. To begin with, to create means to externalise or express, to generate an outcome that has a certain form of materiality (without necessarily being an object but also a process, a performance, etc.). The common misconception is that creativity has to do only or mainly with getting new ideas, something that is supposedly taking place in the head or brain, and what happens after this point (the ‘implementation’ part) is of less concern for the psychologist. A view of distributed creativity, drawing on cultural psychological scholarship, challenges this reduction by extending creative processes into the world of others, of objects, and observing how they unfold in time. The present section will focus on building the necessary theoretical framework enabling us to capture the multiple ways in which creative acts are distributed in the space between individuals and their environment. Such a project has deep roots in cultural psychology and has been expanding within the psychology of creativity as part of what I referred to before as the We-paradigm.

One of the key figures both creativity and cultural psychologists look towards in their effort to rethink creativity is Lev Vygotsky. His dissertation on art, as well as his work on imagination and creative action in childhood and adolescence,

although originally written in the first half of the last century, remain valuable resources for those interested in distributed creative action. One of the main strengths in Vygotsky's work in this area is represented by the fact that he adopted a *radically social and developmental perspective* on the human mind. For him, "to study something historically means to study it in the process of change" (Vygotsky 1978, p. 64) and the path of this developmental change is not reduced to the individual but always passes through others and requires social interaction. A cycle of internalisation and externalisation processes describes the person's relation with the world, in which initially social material is appropriated, transformed, and then embodied in the creation of new objects and meanings (Morgan and John-Steiner 2003). Moreover, as already discussed above, Vygotsky's psychology was based on the concept of mediation through tools and symbols, elements that help the person master the environment and him or herself, respectively. Following his line of thinking, we can locate the emergence of creativity within *the first* manifestations of the symbolic function as expressed in imaginative play. It is only when the child becomes capable of using signs that he or she creates the necessary distance between him/herself and the world that makes creativity possible (Glăveanu and Gillespie 2014). Not living bound by the here-and-now of experience, the child around the age of two starts semiotically regulating his/her action and imagining other worlds within play and fantasy.

These early achievements are extremely consequential and, we can say, there is a direct line to be drawn between them and the most elevated forms of human activity such as artistic production (see Gardner 1982). For Vygotsky, "art is the social within us, and even if it is performed by a single individual it does not mean that its essence is individual" (Vygotsky 1971, p. 249). He was one of the first to acknowledge the fact that every creator, geniuses included, is a product of his or her environment. Creative action is, in this sense, continuous with the past and with what culture has to offer while, by acting on the very resources it uses, it can also leave a mark on culture and its development. But creativity should not be reduced to revolutionary contributions that fundamentally reshape the cultural stock. "Creativity is present, in actuality, not only when great historical works are born but also whenever a person imagines, combines, alters, and creates something new" (Vygotsky 2004, p. 10). Imagination was the central psychological process behind creative production for Vygotsky who considered it a higher mental function developed out of children's play, consciously directed, supported by collaboration with others and thinking in concepts (Smolucha 1992, pp. 49–50). Today his insights are being extensively drawn upon in developmental and cultural psychology as well as creativity studies, in relation to play and meaning-making (see John-Steiner et al. 2010) and socio-cultural studies of collaborative work (see Littleton and Miell 2004).

Another strand of literature that strongly contributes to a vision of distributed creation is represented by *systemic approaches* promoted by authors like Csikszentmihalyi, Gruber and Sawyer, among others. This conception starts from the basic premise that creators are never alone in producing their work but immersed into a complex social and cultural system. Csikszentmihalyi's (1988)

influential model in this regard brings together person, field and domain and places creativity within their inter-relation. Creative action does not end with producing a certain outcome but requires, as an integral part, the social validation of the result, its appreciation by other people, primarily experts or gatekeepers (constituting the field) within art, science, technology, etc. (constituting the domain). In this sense, the production of what is creative is distributed both between people and across time. Gruber contributed to this line of thinking with detailed case-studies of creative work that looked at how creator and context co-evolve. His dynamic systems approach (see Gruber 2005) emphasises the temporal dimension of creative action, its co-dependence on person and context, and has been applied to the study of mainly artists and scientists (see for instance Brower 2003). Sawyer took a more microgenetic approach and focused on the moment to moment emergence of creativity within collaborative action in the case of jazz performances or improvised theatre (Sawyer 2000). This approach is particularly useful as it recreates dynamic systems within local contexts and does not necessarily require established fields or domains in which creativity should take place. Indeed, one of the key limitations of systemic models is represented by their institutional perspective on who can legitimate creativity within a society and how creations contribute to a cultural domain. These ideas are close to sociological theories such as that of Bourdieu who elaborated in his work the notion of field. For him, the field (which can be economic, political, cultural, educational, etc.) is a dynamic concept defined by the position of different agents within it and their inter-relation. His thoughts on art for instance point precisely to the wide networks of distribution engaged by this practice:

Thus, as the field is constituted as such, it becomes clear that the ‘subject’ of the production of the art-work—of its value but also of its meaning—is not the producer who actually creates the object in its materiality, but rather the entire set of agents engaged in the field. Among these are the producers of works classified as artistic (great or minor, famous or unknown), critics of all persuasions (who themselves are established within the field), collectors, middlemen, curators, etc., in short, all who have ties with art, who live for art and, to varying degrees, from it, and who confront each other in struggles where the imposition of not only a world view but also a vision of the artworld is at stake, and who, through these struggles, participate in the production of the value of the artist and of art (Bourdieu 1993, p. 261).

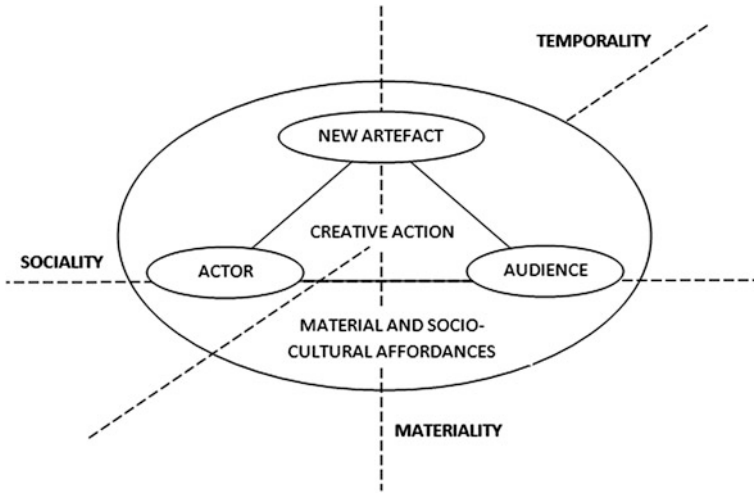
The cultural psychology of creativity, centred on a view of distributed creativity, is in perfect agreement with Vygotskian and systemic approaches to this phenomenon and integrates many of their insights. However, it is also critical of some assumptions, for instance the systemic models’ emphasis on institutionalised fields and domains. From a cultural psychological standpoint, creativity is equally located within self—other interactions and depends on the negotiation of meaning but this kind of social distribution takes place at different levels and in various contexts (see also Bronfenbrenner 1979), from the more mundane (e.g., homes, school, in public spaces) to highly organised (e.g., museums, research labs). In fact, a vision of distribution creativity helps us recover the multiple continuities between everyday life and traditional domains of creative production and notice

the fact that, in all instances, creators act in relation to other people, use cultural tools and signs and draw on the past to anticipate the future. In what follows I will introduce a *cultural psychological framework for distributed creativity* that builds on previous work aimed at reconceptualising creativity theory and rewriting its basic language.

One of the key frameworks used by creativity researchers as a conceptual organiser is represented by Rhodes's (1961) four P's model that includes person, product, process and press (the environment). Emerging out of a study of definitions, this initial conception is used to locate different studies in this area, according to their focus. Despite the fact that Rhodes explicitly stated that the four elements constitute a functional whole, most references to the four P's reveal them as static and separate units. The fact that the creative person is not the only point of focus in the literature might seem encouraging for views of distributed creativity. However, since the four P's are not conceptually articulated and can be 'detached' from each other, the idea of distribution becomes less obvious. This is even more the case when we notice that creative processes are typically considered to take place in the head and products are studied only in order to infer something about the person and his/her creative potential, while press elements remain external to the individual. What this conception is missing is theoretical elaboration and integration, starting from a developmental perspective of *how* exactly people, objects and the processes that connect them participate in the generation of novel outcomes.

My own conception of distributed creativity is close to John Dewey's discussion of human experience in art. For him, "because every experience is constituted by interaction between 'subject' and 'object', between a self and its world, it is not itself either merely physical nor merely mental, no matter how much one factor or the other predominates" (Dewey 1934, p. 256). In distributed creative acts we cannot easily disentangle the psychological from the physical, the social from the individual, nor should we be concerned with such segmentations (a main preoccupation within the extended mind literature, as discussed earlier in this chapter). The two axes of self—other and material—symbolic are built into every creative act, even those performed in solitude or taking place, apparently, only 'inside' the mind. Most importantly, it is precisely because self and other don't share the same position in the world and the symbolic does not have a one-to-one relation to the material that makes creative expression is possible.

Let me elaborate a bit on this idea of *difference*, crucial from a cultural psychological and developmental point of view. When an infant is born, he or she starts gradually to perceive the world as different from his/her body and understand that there is a 'non-me' space around, not ready to immediately gratify one's needs. Gradually, with the first use of symbols (for instance in the process of acquiring language), the child becomes capable of accessing 'as-if' worlds and creating a distance between him/herself and this environment. The existence of multiple perspectives, represented by other people, and the fact that the world can be manipulated symbolically are the *sine qua non* conditions for creative expression. But they are not sufficient. It is due to the passing of time and the ever-changing



**Fig. 2.1** A framework of distributed creativity (adapted from Glăveanu 2013)

nature of both person and context that humans are driven to create in order to adjust to the world and grow within it. Creativity is not the difference itself, nor the process of distanciation, but emerges as an encounter between person and world, a form of distributed activity that *acts* precisely *on* the differences above in ways that acknowledge them, exploit their potential, or try to reduce or bridge them (for a more elaborate discussion of these ideas see Glăveanu and Gillespie 2014).

The three main types of differences referred to above—between self-other, symbol-object, past-future—are inscribed into the rewriting of the four P's I recently proposed in the form of a *five A's model* (Glăveanu 2013). This conceptualisation defines creativity in relation to (at least) the following five elements: actors, audiences, artefacts, actions and affordances. While it might seem at first sight that one typology is simply replaced with another, the five A's model represents more than a change of terms, it reflects a change of epistemological position. Creativity can no longer be said to reside 'within' the person, the product, etc. It emerges as a form of action engaged in by various actors (individual or groups), in relation to multiple audiences (again individuals or groups), exploiting the affordances of the cultural (symbolic and material) world and leading to the generation of artefacts (appreciated as new and useful by self and/or others). All the five terms mentioned above are *relational* in nature: actors are defined by their interaction with audiences, action engages existing affordances and generates new ones, artefacts can become agents within creative work, etc. The visual depiction proposed above (see Fig. 2.1), captures the totality of person and culture in distributed acts of creativity and it resonates with old and new conceptions of art that focus on the triad of artist, audience, and object in creative production (see Dewey 1934; Wilson 1986). Central to it is the meditational triangle specific for cultural psychological accounts of activity (see the previous section). Essentially thus, the

five A's framework is founded, in opposition to romantic notions of inspiration, on a conception of creativity as action, as a form of doing—"a creativity of the hand" (Brinkmann and Tanggaard 2010, p. 256).

The depiction of distributed creativity proposed in Fig. 2.1 reveals three main types of distribution: *social*, *material* and *temporal*. These are captured by the inter-relation, in creative acts, between actors and audiences, by the use of affordances and cultural resources to generate new artefacts, and by the time dimension inscribed into creative work, respectively. These three main forms of distribution have been referred to by others both within the cognitive (Hutchins 2000) and the socio-cultural tradition (Cole and Engeström 1993) in relation to thinking. In the words of Hutchins:

When one applies these principles to the observation of human activity 'in the wild', at least three interesting kinds of distribution of cognitive process become apparent: cognitive processes may be distributed across the members of a social group, cognitive processes may be distributed in the sense that the operation of the cognitive system involves coordination between internal and external (material or environmental) structure, and processes may be distributed through time in such a way that the products of earlier events can transform the nature of later events (Hutchins 2000, pp. 1–2).

Distributed creativity is, therefore, a conception that extends previous accounts of cognition and makes them engage with the sociality, materiality and temporality of the world. There are numerous arguments and illustrations of this dynamic and the book will continue by unpacking each line of distribution in turn. For instance, discussing creativity in art Beardsley (1965) concluded that "the true locus of creativity is (...) the work itself as it lives in the experience of the beholder" (p. 302), thus reaffirming the need to operate within self—other relations (something captured very well by systemic models of creativity). Keeping the example of art, Dewey (1934) described it as a process of making, giving a material form to ideas in a continuous cycle of doing and undergoing the results of one's action. Finally, these social and material dimensions become manifest solely as part of a temporal trajectory. In the end, action always occurs in time (Brenner 1980) and creative action makes no exception (Gruber and Davis 1988). Following Bergson (1911, p. 14), we can say that "duration means invention, the creation of forms, the continual elaboration of the absolutely new". It is because we live in irreversible time the same thought or feeling experience at one moment can never occur twice in an identical manner (Valsiner 2013). Novelty is therefore not the exception in our existence (as romantic theories of creativity would want us to believe) but the norm, it exists not in the mind but outside of it, in the world, or, better said, it *defines* the relation between mind and world.

A final note before proceeding to explore each one of these three types of distribution would be to make clear the fact that creativity is *simultaneously* socially, materially and temporally distributed and, in effect, it could not be otherwise. For instance, to exist in a world defined by differences of position and perspective between self and other (actor and audiences in my framework) fosters multiple interpretations of the same material reality and its objects. Semiotic processes of meaning-making both mediate the relation between self and other and are

shaped by it since any change of social position leads to new processes of symbolic (re)construction. Moreover, just as the passing of time imprints a certain dynamic to differences between people, symbols and objects, these differences themselves mark the temporal unfolding of creative action and segment its flow. Models of the creative process in psychology fail, on the whole, to be more sensitive to the diversity of changes occurring, in time, between people and people and objects, and try to abstract universal stages applicable to any context or type of creative work. Distribution loses, in this case, its dynamic aspect and takes on an almost mechanical form. The cultural psychological model of distributed creativity developed in this book brings the situated nature of creative action to the fore and describes each instance of creativity as the interplay between actors, audiences, actions, artefact and affordances. Distributed creativity is, in this sense, at once patterned and flexible, constrained by the past and fundamentally open to the future.

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Distributed Creativity

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