

# Mind in action: expanding the concept of affordance

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### Introduction

Originally introduced by J. J. Gibson (1979) in the context of the development of an ecological approach to visual perception, the notion of *affordance* refers to the perception of opportunities for action that specific objects in the environment invite for an agent. Opposing some of the most fundamental tenets within traditional cognitivism, Gibson claims that an agent's visual perception of the environment cannot be reduced to the passive apprehension of mere physical properties (such as size, location, form or color) that later produce second-order representations of the environment (see also, Heras-Escribano, 2019; Heras-Escribano & De Pinedo-García, 2018). It is rather that agents directly perceive what they can do with objects in the environment, thus modulating the agent's embodied and embedded behavior (see, J. J. Gibson, 1950, 1966). This "direct perception" of action-guiding properties of objects in the environment emerges as a novel way of explaining the agentive purposiveness that characterizes how we ordinarily navigate reality (J. J. Gibson, 1950; Heft, 2001; Heras-Escribano & De Pinedo-García, 2018). To illustrate: when playing football, one primarily perceives the ball as *kickable*, in virtue of perceiving the physical properties of the ball hurtling toward oneself. The perception of the *ball as kickable* is constitutive of the perceptual experience of the ball. The *perception of the ball as kickable* is the phenomenon that Gibson aimed to capture with the notion of affordance.

Even though the concept of affordance was originally introduced as a way of exploring visual perception, over the last years the notion has been widely applied to the analysis of bodily action and perceptual experience in general (Heft, 2007, 2017). More importantly, interdisciplinary research programs have lately started to explore ways in which the concept of affordance could inform debates about the nature of emotions and affectivity, agency, social cognition, neurodiversity, psychopathology, and, no without controversies, mental actions such as conscious thought and imagination (Krueger & Colombetti, 2018; Maiese, 2018, 2021; McClelland, 2020; Nielsen, 2022; Proust, 2016, 2022). In some cases, these programs have focused on practical applications of the concept to, among others, education theory, architecture, and even clothing technology (Stevens et al., 2024; Young & Cleveland,

2022). Thus, the number of disciplines that have made use of the notion of affordance is extensive, ranging from cognitive psychology, artificial intelligence or philosophy to architecture, music, and design (Duan et al., 2023; Krueger, 2014; Rampa & Parmentier, 2024).

Yet, the debate about the very definition of the notion of affordance and what it involves more broadly remains open (Shaw et al., 2018; López-Silva, 2020; López-Silva et al., 2022; Ratcliffe & Broome, 2022; Vauclin et al., 2023, among others). As it is shown in this Special Issue, for some authors, this exploratory agenda leads to a number of important problems due to the perceptual origin of the notion; for others, such projects could offer unique forms of enriching debates within psychology, philosophy, cognitive sciences, and psychopathology. “*Mind in Action: Expanding the concept of affordance*” aims at gathering different voices around the exploration and novel application of the concept of affordance to different debates within current philosophical psychology and related fields. As a whole, this Special Issue offers an updated look at cutting-edge contributions on some of the core controversies and advancements in the discussion about what affordances are and what they involve.

### Agency, reasons, and mental affordances

One of the most novel – yet subject of controversies – current applications of the concept of affordance occurs in the analysis of cognitive experiences, especially mental actions and thoughts. There are different positions in this. For example, McClelland (2020) examines cases of perception affording mental action such as attending, imagining, and counting. Metzinger (2017) and Jorba (2020) explore cases of “internal” cognitive activity such as mind-wandering generating mental actions such as reflecting or calculating. More recently, Gray (2024) examines the case of introspectively accessible mental states affording mental actions such as categorizing or attending. In the same vein, critically assessing McClelland’s (2020) mental affordances hypothesis, Bruineberg and Van den Herik (2021) argue for the embodied nature of mental affordances and thus of mental action.

Adding on this recent work on mental and cognitive affordances, the first paper of this special issue, Jöelle Proust explores how metacognitive experience can detect cognitive affordances. Taking into consideration current evidence from cognitive sciences, the author claims that metacognitive experiences can immediately “tell” us if specific cognitive tasks are doable, mildly difficult, or hopeless. These cognitive affordances could be perceived through metacognitive feelings whose function is to select, engage, revise, and post-evaluate cognitive actions. One of the underlying ideas in Proust’s proposal is that, in the same way in which the concept of affordance explains potentiation of behaviors, the concept could be used to explain reactive

potentiation of cognitive actions, and, therefore, the notion could inform more dynamic approaches to thinking and action.

Exploring a similar path, **Tom McClelland** and **Monika Dunin-Kozicka** elaborate on a case introduced in McClelland (2020) to analyze whether humans perceive affordances for imaginative actions. The authors examine the role that environment clues play in enabling imaginative activities such as forming a sensory image, supposing a proposition, engaging in a pretense, or some combination of them. One main kind of example provided arises when, facing the doubt of what might be the best bodily action to perform in traversing a series of stepping stones across a river, one mentally imagines a viable path before continuing. As we can see, both Proust and McClelland and Dunin-Kozicka proposals offer an example of novel applications of the notion of affordance to the analysis of mental actions.

However, sometimes, with novelty comes controversy and, in the third paper of our compilation **Miguel Segundo-Ortin** and **Manuel Heras-Escribano** critically assess the attempts to extend the notion of affordance to include mental or cognitive actions. In particular, they focus on McClelland's (2020) Mental Affordance Hypothesis and Jorba's (2020) notion of cognitive affordances. The authors claim that such projects lack an explanation for how these affordances can be actually perceived or experienced by the individuals, and how the perception of mental affordances helps explain our ability to engage in certain mentioned mental actions such as counting, imagining, or reasoning. Without such explanation, they claim, the project of extending the notion to mental affordances remains unjustified, and so there is the risk of trivializing the very notion of affordance and the whole program of ecological psychology – if the notion is not properly applied. Interestingly, in the final sections of their paper, McClelland and Dunin-Kozicka provide some answers to the question of how affordances for mental action such as imagination can be perceived in the environment, and, with this, the authors leaves room for further explorations.

A different exploratory path is taken by **Tobias Starzak** and **Tobias Schlicht** when thinking about the scope of application of the notion of affordance. Dennett (2017, p. 38) suggested that “[i]f we understand the way our human world of reasons grew out of a simpler world where there were no reasons, we will see that purposes and reasons are as real as colors, as real as life”. Taking this into consideration, Starzak and Schlicht, in the fourth article of the volume, examine how the concept of affordance could inform a naturalistic approach to the debate about what constitutes a reason for action. After distinguishing between psychologism (the view that reasons are mental states, specifically, belief-desires pairs) and factualism (the view that reasons are facts rather than mental states) about reasons, the authors

appeal to the resources of enactivist views of the mind to sketch an initial program aiming at arguing that affordances can play the traditional roles of explanatory, motivating, and normative reasons (for the suggestion that affordances can play the role of motivating reasons, see also Jorba, 2020).

Following a similar type of conceptual exercise, **David Sanchez**'s paper examines how the notion of affordance can inform our understanding of language in general, and perceptual judgments in specific. The author points out that cognitive sciences and the philosophy of language have remained separated due to a number of philosophical debates within the fields. For this reason, Sanchez argues that it is necessary to develop a nonrepresentational philosophy of language informed by the ecological notion of affordance. By proposing this, Sanchez's project aims at bringing closer the gap between current ecological and enactive approaches to the mind with semantics and the philosophy of language.

### Affordances and the affective realm

Over the last years, a renewed interest in affectivity research within cognitive sciences and philosophy has allowed the notion of affordance to expand its scope of practical and conceptual applicability. One of the most fundamental ideas behind ecological psychology is that the most primitive relationship between the individual and environment is not reflective but affective. Ecological psychology suggests that the environment is never neutral, but it is affectively valenced as positive or negative according to the self-maintenance patterns and normativity of the organism (Colombetti, 2017; Maiese, 2018, 2021).

In this context, **Enara García**'s paper claims that current research on affectivity seems to lack an appropriate understanding of affective experience with structurally different forms. Considering this, the author focuses her analysis on the understanding of affective atmospheres, namely, those affective qualities of situations that are perceived in a blurred way and modulate individual and collective experiences of situatedness. García analyses the relationship between affective atmospheres and affordances by claiming that atmospheres operate over the soliciting character of the whole field of relevant affordances, this allowing for certain affordances to become more salient than others. García's proposal uses the phenomenology of atmospheres to articulate the primordial affective character of experience in ecologically terms in a way that is mindful of phenomenological distinctions between structurally different forms of affectivity.

The connection between affectivity and affordances that García explores by looking into the concept of affective atmosphere is also taken by **Daniel Vespermann** in his article. The author explores the way in which fields of affordances change over time depending on

personal and cultural settings. Vespermann coins the concept of “affective affordance” in relation to the notion of affective atmosphere. Based on the concepts of social and emotion scripts, Vespermann’s claim is that atmospheres can be understood as solicitations to change situational emotional scripts. The idea is that the atmosphere of a situation implies an emotion-regulatory profile different to what and how single objects solicit. From this point of view, atmospheres are relevant for coordinating social interactions and modulating personal concerns pertaining to a given situation. In Vespermann’s view, atmospheres make us aware of how one is affectively disposed toward situations-specific feeling norms. Vespermann’s account allows us to clarify the affective underpinnings of the perception of social norms.

A more explorative stance is taken by **Aaron Ben-Ze’ev**, who applies the concept of affordance to the examination of the romantic realm. Romantic thoughts, actions and dispositions could be considered as some of the most distinctive aspects of our social life. For Ben-Ze’ev, the romantic realm offers a rich landscape of affordances, which he explores both in the non-digital and the current digital era. The guiding idea of Ben-Ze’ev’s project is that the clarification of this type of affordance is useful from both pragmatic and theoretical viewpoints. According to the author, romantic affordances involve invitations for displaying certain behavior, such as persuading, seducing or dissuading from taking certain romantic actions.

### **Affordances, neurodiversity and psychopathology**

The way in which the concept of affordance allows us to explore the dynamic and codependent relationship between mind and world (including physical aspects of reality) proves fruitful for the exploration of neurodivergencies in cognitive trajectories, as shown in **Melina Gastelum** and **Itzel Cadena**’s contribution. By taking an embodied approach to cognition, the authors propose to rethink the way in which cognitive systems develop in relationship to their particular “normative behavioural settings”. For the authors, behavioral settings emerge from joint actions in conjunction with affordances available in a specific environment. Thus, in order to understand neurodiverse cognitive trajectories, we should consider the richness of the organism-environment relationship with others and the physical environment. Interestingly, and following the path of previous work (Hellendoorn, 2014), the authors take the case of the Autistic Spectrum to explore the impact of their view. In addition to the evident clinical relevance of Gastelum and Cadena’s exploration, the authors also discuss important ethical concerns that their ecologically enriched approach to neurodivergence seems to open. With this, this contribution not only allows the

concept of affordance to inform the way in which we think about neurodivergence, but also debates in the ethical dimension.

Over the last years, the concept of affordance has not only helped to rethink neurodivergence, but it has also informed the development of more contextualized approaches to abnormal phenomena in the philosophy of psychiatry and phenomenological psychopathology (Kim & Effken, 2022). Often, the term has been used to make sense of how the experience of the world of subjects change in, among many others, schizophrenia, depression, and obsessive-compulsive disorder (see for example, Krueger & Colombetti, 2018; Maiese, 2021; Nielsen, 2022; Kim & Effken, 2022; Krueger, 2020). However, this application of the concept has not been free from criticism. For example, Ratcliffe and Broome (2022) claim that the notion of affordance is insufficiently discerning when it comes to the description of what exactly changes in anomalous experience from a phenomenological first-person perspective.

Recognizing the limitations of the notion, **Joel Krueger's** contribution in this collection remains optimistic toward affordance-based approaches to psychopathology. The author argues that affordances can help to clarify the causes, character, and consequences of subtle changes in experience in psychopathological phenomena in a way that alternative views cannot. Krueger applies this framework to examine the role that build environments play in shaping and sustaining spatial agency, a particularly altered aspect of experience in psychopathology. Krueger approach allows, then, a more fine-grained analysis of the different individual and social factors that shape an individual's disrupted spatial agency.

### **Affordances, space and the social and moral realm**

Still within the examination of the relation between affordances and space, and focusing on architectural research, **Turid Borgstrand Oien, S. Grangaard** and **V.L. Lygum's** contribution presents three empirical cases – an office space, a home environment, and an urban event – to study the role of affordances in understanding the relationship between humans and their built environment. Departing from previous research that uses affordances to study the emotional impact in the field of design (Norman, 1988), the authors examine how the affordance perception of certain elements in these contexts can really influence the actions and social interactions taking place, relevantly highlighting the dynamic and multi-sensory aspect of the analysis, which the authors argue is usually restricted to vision perception.

Building on the idea that perception is dependent on complex social and historical processes (Reed, 1986), **Rasmus Birk** and **Nick Manning's** contribution highlight the need of ecological psychology to draw from the



resources of sociology and social theory. This exploration leads the authors toward the development of the notion of “social affordance” and an ecological social science. For the authors, and following Heft (2018) affordances are part of social practices, thus converting places into meaningful units, for instance. Such a project, though, encounters disciplinary, epistemological and methodological obstacles, which the authors discuss in their paper.

Further dwelling into the relation of affordances and sociality, **David Spurrett** and **Nick Brancazio** originally point out the importance of clothing in human bodily interactions with the environment and the role of clothing in shaping the space of affordances. More specifically, they focus on examples such as high heels, obligatory skirts and sewn-in pockets, which normatively and differently apply to women and men, to make the case for thinking of clothing as an affordance transforming technology. This is another clear example of how ecological psychology and feminist theory can mutually enlighten each other in novel ways not explored so far, contributing to the research initiated by McClelland and Sliwa’s (2022) recent article on gendered perception, where they suggest a gender disparity in the perception of domestic affordances such as the dishwasher affording emptying or the floor affording sweeping.

Considering the importance of social and cultural structures in shaping affordance perception, and building on work carried out by ecological psychologists such as Eleanor E. J. Gibson (1969) and Anne Pick (E. J. Gibson & Pick, 2000), **Matthew Crippen** and **Dag Munk Lindemann** explore how learning and educational spaces can be enabling or disabling for individuals belonging to different social groups. More specifically, the authors investigate how participation, learning, and development in class can be modulated by affordances to create inclusive contexts in multicultural learning settings. They present a taxonomy of affordances in education, ranging from physical affordances already explored by the pedagogue Maria Montessori (1912) to cultural and participatory affordances. Their guiding motto in analyzing educational contexts relies on the idea that aiming at equality in this context consists in examining the different “openings and closures in environments” that students find, which are perceived differently by different individuals, thus also suggesting a pluralistic means of achieving educational goals. Crippen and Lindemann’s contribution allows us to see how the development of novel applications of the notion of affordance can impact not only the academic field but also involve very specific practical consequences.

Finally, one relevant dimension of human interaction is morality and, in particular, how moral encounters involve moral action. This is the challenge that **Peter Fabienne** takes up in his article by examining a subset of affordances as opportunities for moral action, what he calls “moral affordances”. One of the examples proposed by the author refers to how sincere apologizing might afford the action of



forgiving. He develops the case of moral affordances through the notion of “fittingness”, which is the feature that would distinguish moral affordances from other affordances, and compares his view to alternative explanations of the phenomenology of moral demands that appeal to reasons and obligations.

### Final remarks

*“Mind in Action: Expanding the concept of affordance”* is able to show how the concept of affordance allows for characterizing and capturing different dimensions of perceptual experience and human relations to the environment, both in the (controversial) extension to mental actions and cognitive processes and in the culturally and socially embedded context of human interactions and practices. Departing from its traditional definition, alternative subtypes of affordances such as “mental/cognitive affordances”, and “moral/cultural affordances” were explored. Whether or not these and other applications follow the ecological psychology orthodoxy – or depart substantially from it—, the sample articles gathered in the Special Issue shows the fruitfulness of the notion of affordance and the impact of the tradition where it originated. This Special Issue is also another example of the notable capacity of the concept and, consequently, of ecological psychology, to relate and mutually enlighten different philosophical and psychological traditions (phenomenology, analytic philosophy, enactivism, cognitive psychology and neuroscience, etc.), as well as different fields of inquiry (social theory, ethics, feminist theory, architecture, psychopathology, etc). We believe that these and other future contributions will further enrich the expanding field of the application of the concept of affordance.

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