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ORIGINAL RESEARCH

Conceptual affordances: (How) should they inform conceptual engineering?

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Abstract

Conceptual engineering is a normative approach to conceptual work aimed at the improvement of concepts through evaluation, design, and implementation. To this end, conceptual engineers need to have a measure of what an adequate concept amounts to. Functionalism offers such a standard. Following the functional approach, concepts have functions and are adequate to the extent that they can fulfil their functions. Functional approaches have traditionally operated on the assumption that conceptual engineers ought to concern themselves with what concepts *should* do. Recent contributions have advocated a more fine-grained and context-sensitive understanding of conceptual functions, extending beyond proper functions to encompass normative and possible functions. Building of these developments, this paper introduces the notion of *conceptual affordances*, understood as the potential actions, uses, and thoughts that a concept enables or constrains relative to a given user and within a given context. It is argued that an affordances-informed approach can and should supplement and enrich functionalism. Indeed, by attending to conceptual affordances, conceptual engineers can better capture what concepts *enable* us to do, thus offering a more holistic and ethically attuned framework for conceptual evaluation, design, and implementation.

Keywords Conceptual engineering · Conceptual ethics · Functions · Affordances · Philosophy of technology

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1 Introduction

Conceptual engineering is a normative approach to conceptual work. The purpose of conceptual engineering is the improvement of our concepts by means of conceptual evaluation, design, and implementation (Cappelen & Plunkett, 2020; Chalmers, 2020).[1,2] Improving concepts presupposes a standard of what an *adequate* concept amounts to. Functionalism has been proposed as an approach that can act as a normative compass in this respect. According to functionalism, concepts have functions, and the *point* of concepts, what concepts are *for*, is the fulfilment of such functions. Relatedly, concepts are adequate to the extent that they fulfil their functions.[3] With

[1] Here, I do not adopt a substantive notion of concept. There is significant disagreement in the literature about what concepts are—provided there are any such things as concepts, and that concepts should be the target of conceptual engineering in the first place (e.g., Machery, 2009; Cappelen, 2018; Burgess et al., 2020; Koch, 2021; Isaac, 2023). Rather than attempting to settle this dispute here, this paper adopts a methodologically ecumenical approach (I take this apt description from Kölbel, 2023) and maintains a broad understanding of concepts as functional kinds (Lalumera, 2009). I acknowledge that this is an incredibly broad notion. The choice to work with a broad notion of concepts as functional kinds is deliberate: I take this to be both consistent with current practice in conceptual engineering, where commitment to substantive notions of concepts is often left open (Chalmers, 2020; Haslanger, 2020a), and a theoretically careful response to the challenge of overcommitment in contested philosophical terrain. On the one hand, competing views on the metaphysics of concepts are each supported by divergent explanatory goals and background commitments. Committing to any of such positions would embroil the paper in disputes that are orthogonal to its primary aim: to argue for the value of conceptual affordances in informing and guiding conceptual engineering projects. On the other hand, this paper's central argument does not depend on any particular theory of concepts, as the notion of conceptual affordance can be operationalised across a range of competing views. That said, Sect. 2.1.1, 2.1.2, and 2.1.3 illustrate through examples how the affordance-theoretical approach can be embedded within competing views on concepts. This is meant to show that the notion of conceptual affordance applies across different theories, and to support the claim that affordances are a broadly applicable and theoretically fruitful tool for conceptual engineering.

[2] While I follow much of the literature in treating concepts as the target of evaluation in conceptual engineering, I acknowledge that this is not a universally shared assumption (e.g., Haslanger, 2000; Burgess et al., 2020; Koch, 2021; Isaac, 2023). Indeed, some scholars have cast doubt on the coherence and utility of understanding concepts as the targets of conceptual engineering (e.g., Cappelen, 2018; Deutsch, 2020). I do not attempt to resolve these debates here, where I adopt a pragmatic approach to the issue: I assume, for the sake of argument and illustration, that there are such things as concepts and that concepts are the target of conceptual engineering. It should be noted that this is a methodological choice, not a metaphysical commitment—indeed, the affordance-theoretical approach advanced in this paper can in principle be extended to other targets of conceptual engineering (such as words, e.g., Thomasson, 2021), to the extent that they enable or constrain possibilities for action in a specific context and with regard to specific users.

[3] It should be noted that, to be able to meaningfully guide conceptual engineering projects, it is insufficient to argue that concepts have functions and that fulfilling its function(s) makes a concept adequate. Rather, functionalism must be able to address two additional questions. That is, when conceptual engineers claim that concepts have functions and are adequate to the extent that they fulfil such functions, which functions are they referring to, and what does it mean for a concept to fulfil its function(s)? For the purpose of this paper, I will leave such issues aside. It suffices to know that the research on functionalism lies in what can be described as a pre-paradigmatic state, but some tentative hypotheses have been advanced with regard to both questions. On the one hand, the conceptual engineering scholarship has recently started to move towards a deflationary account of conceptual functions (Nado, 2021; Riggs, 2021; Jorem, 2022; Hopster & Löhr, 2023), according to which which function(s) a given concept should fulfil is ultimately context-dependent and should follow a case-by-case determination. On the other hand, it seems reasonable to expect that concepts will admit of degrees of functional fulfilment and, consequently, conceptual adequacy. That is, it may not be the case that all concept will be adequate or inadequate in absolute terms.

some notable exceptions (Cappelen, 2018), conceptual engineers have often adopted some version of functionalism (e.g., Haslanger, 2000; Plunkett & Sundell, 2013; Prinzing, 2018; Queloz, 2019; Chalmers, 2020; Haslanger, 2020b, c; Simion & Kelp, 2020; Thomasson, 2020; Belleri, 2021; Miranda Vilchis, 2022; Hopster & Löhr, 2023; Marchiori & Scharp, 2024). Functionalism traditionally operates on the assumption that conceptual engineers ought to concern themselves with what concepts *should* do. In practice, this has sometimes restricted the focus of conceptual engineers to the *intended* functions of concepts, thus systematically neglecting what concepts *could* do, what they *enable* us to do. Recent proposals (e.g., Nado, 2021; Riggs, 2021; Jorem, 2022; Queloz, 2022; Köhler & Veluwenkamp, 2024) have enriched this view by articulating a more context-sensitive and dynamic approach to functionalism.

Building on such developments, this paper introduces the notion of conceptual affordances as a complementary framework for conceptual engineering. Conceptual affordances refer to the potential actions, uses, and thoughts that a concept enables or constrains relative to a user and a given context. A coarse-grained notion akin to affordances has already emerged organically in the conceptual engineering literature bearing other names, e.g., under the heading of *possible functions* (in Nado, 2021). However, as this paper illustrates, a more systematic and robust account can be developed by drawing on the notion of affordance as introduced in ecological psychology and later elaborated in the philosophy of technology scholarship, which engages in similar pursuits as conceptual engineering, with similar normative aims.

Attending to the affordances of concepts allows conceptual engineers to identify not only the fulfilment of intended conceptual functions but also the range of uses that concepts facilitate, including unintended or unforeseen uses and effects of conceptual deployment. Understanding conceptual functions through the lenses provided by the notion of affordance solidifies the move towards an understanding of concepts as tools whose uses may extend beyond their original design, often in ways that are contextually bound and user-dependent (Köhler & Veluwenkamp, 2024). This shifts the focus from what a concept *should* do to what a concept *enables* one to do, thus offering a richer understanding of the roles that a given concept might perform.

This paper argues that affordances can supplement and enrich functionalism in a way that is both theoretically fruitful and ethically necessary. By considering the affordances of concepts, conceptual engineers can better analyse and anticipate both intended and unintended consequences of conceptual use, which is crucial for guiding conceptual engineering projects effectively. Additionally, in cases where multiple competing concepts meet standards of functional adequacy, attending to their respective affordances offers an additional normative criterion for conceptual selection, allowing for more context-sensitive and ethically responsive choices in conceptual engineering projects.

The paper is structured as follows. Section two introduces the notion of affordance and discusses its relevance to the functional approach in conceptual engineering. Section three expands on this idea, illustrating how the integration of conceptual affor-

Rather, functions may be fulfilled in gradients, rather than in binary terms. This is consistent with Nado's (2021) position.

dances into functionalism can provide a more holistic understanding of conceptual adequacy. Section four contains the conclusion.

2 From conceptual functions to conceptual affordances

Functionalism in conceptual engineering traditionally focusses on what concepts are *supposed* to do. This perspective emphasises assessing concepts primarily by reference to the roles they are intended to fulfil (their proper functions[4])—or the roles we wish them to fulfil—while often overlooking a broader analysis of what concepts might enable beyond those these functions. However, recent proposals have increasingly highlighted the significance of conceptual functions beyond proper functions, challenging the conventional focus and urging a more comprehensive, context-sensitive approach to conceptual engineering.

For example, Nado (2021) provides a critical perspective on the limitations of focussing solely on proper functions, which she deems ill-advised, arguing instead that other, user-dependent functions should also be of interest to conceptual engineers beyond intended functions. In a similar vein, one may interpret scholars arguing for the assessment of conceptual adequacy based on a case-by-case determination of the relevant function(s) that a given concept should serve within a given context as adhering to a similar position to Nado's (Riggs, 2021; Jorem, 2022). Again, Queloz (2022) highlighted the need for functional accounts to attend to the dynamic interplay between conceptual use and social practice. More recently, Köhler and Veluwenkamp (2024) advocated evaluating concepts by reference to what matters (to us) in a given context, drawing on the notion of *normative function*.

Here, I build on such insights, which align with an affordance-theoretical approach, and suggest that conceptual engineers should draw on conceptual affordances for the assessment of conceptual adequacy. The following sections introduce the notion of affordance, articulate its features, and illustrate how affordances can be applied to the conceptual domain. I begin by discussing the key features of affordances, which will serve as building blocks for integrating this notion into conceptual engineering.

[4] The notion of a *proper* function refers to the function or role that a concept is supposed to serve due to its history of selection, whether in biology, language, or social practice, often grounded in either the original intentions behind the concept or its role in a system of practices or institutions. This idea draws from theories of function in biology and philosophy of language, particularly teleological accounts of function (Millikan, 1984). In this sense, a concept's proper function can be understood as its historically established purpose in fulfilling a specific epistemic, moral, or practical role. Other terms used in the literature include *intended function* and *system function*, which capture slightly different nuances. The *intended* function of a concept typically refers to the purpose a concept was explicitly designed or introduced to fulfil, often associated with the intentions of its creators or early users (Cappelen & Plunkett, 2020). By contrast, a concept's *system* function reflects the role a concept plays within a broader system, regardless of the intentions behind its creation, thus emphasising the functional interdependence between concepts within institutional or linguistic frameworks (Haslanger, 2012). Here, I will use intended, proper, and system functions interchangeably to mean the purpose that a concept is supposed to serve.

2.1 Affordances

The notion of affordance picks out the range of possible actions that an artefact offers to an agent within a given environment (Gibson, 1977, 1979, 1982). This notion captures the ways in which artefacts enable or constrain actions, depending not only on their intrinsic features, but also on the characteristics of the environment and the features of the user.[5] Affordances thus encompass both intended and unintended uses of the artefact, and emerge from the dynamic interaction between artefact, user, and context.

Being mindful of the uses that artefacts allow—by virtue of a combination of their features, the agents involved in their use, and the context of use—broadens the scope of inquiry to include unintended (yet possible) uses that artefacts or concepts afford. With this in mind, consider the following description of the roles of towels in *The Hitchhiker's Guide to the Galaxy.*

> A towel [is] about the most massively useful thing an interstellar hitchhiker can have. *Partly it has great practical value*—you can wrap it around you for warmth[,] you can lie on it on the [beach,] you can sleep under it[,] use it to sail a mini raft[,] wet it for use in hand-to-hand-combat[,] wrap it round your head to ward off noxious fumes [,] you can wave your towel in emergencies as a distress signal, and of course dry yourself off with it if it still seems to be clean enough. *More importantly*, *a towel has immense psychological value.* [If a non-hitchhiker] discovers that a hitchhiker has his towel with him, he will [happily] lend the hitchhiker [any items] that the hitchhiker might have accidentally "lost"[, thinking] that any man that can hitch the length and breadth of the Galaxy [and] still know where his towel is, is clearly a man to be reckoned with. (Adams, 1979, p. 19, emphasis added)

What makes towels so useful for hitchhikers relates in large part to the alternative uses that towels have beyond their traditional role as absorbent pieces of fabric used for drying things, people, or animals. In fact, if non-hitchhikers were aware of all the uses of towels described in the *Guide*, it would not be nearly as noteworthy or remarkable for a hitchhiker to carry a towel, which would undercut the very reasons why towels are so useful for hitchhikers. Rather, these uses, which towels afford,

[5] It should be clarified that the notion of affordance presented in this paper reflects a weak, perception-neutral account of affordances, that is, a view that does not engage with the question of whether affordances must be perceived to exist. This more relaxed view of affordances sets aside meaningful disagreements about the extent to which affordances are fundamentally tied to an agent's perception, as in Gibson's (1977, 1979) original formulation, where perception is crucial to understanding what an artefact (or concept) affords (e.g., McGrenere & Ho, 2000; Chemero, 2003; Chemero et al., 2003; Klenk, 2021). This weak account is employed deliberately, as it allows for a broader application to conceptual engineering without introducing unnecessary complexity. Indeed, my aim here is not to do justice to the richness and depth of the scholarly debates on affordances, nor to engage in such debates, but to provide a more comprehensive framework for understanding how concepts can enable or constrain actions, whether or not such possibilities for actions are actively perceived by the user. Hence, for the purposes of this paper, a weaker notion of affordance suffices to illuminate how concepts can invite or enable certain possibilities for conceptual use, regardless of whether these are consciously perceived by users.

are highly dependent on a combination of the artefact (the towel), the context (intergalactic travel), and the agent involved (a hitchhiker). In the example at hand, the unintended affordances of towels seem to be overall desirable.

However, affordances are a double-edged sword: they enable or constrain our actions well beyond the confines of the intended functions for which they were designed. This means that, by bearing affordances, artefacts will always be able to do more than what we want them to do. Indeed, what happens when designers can predict an affordance, which they deem undesirable, and wish to restrict the possibilities for action such that the artefact will cease to bear such an affordance? Consider the following extract from *The Restaurant at the End of the Universe*.

> The designer of the gun had clearly not been instructed to beat about the bush. 'Make it evil' he'd been told. 'Make it totally clear that this gun has a right end and a wrong end. Make it totally clear to anyone standing at the wrong end that things are going badly for them. If that means sticking all sorts of spikes and prongs and blackened bits all over it then so be it. *This is not a gun for hanging over the fireplace or sticking in the umbrella stand*, *it is a gun for going out and making people miserable with*.' (Adams, 1995, p. 172, emphasis added).

Crucially, unintended, albeit predicted, affordances cannot be eliminated just because one is mindful of them and deems them undesirable. Affordances are, in some salient respect, both unpredictable and beyond the control of the designer. At the same time, it is important to stress that this does not make being mindful of affordances a futile exercise. Indeed, firstly, it is important to emphasise that affordances, while not entirely under the control of the designer, are not *wholly beyond* the designer's influence. That is, even though some affordances might elude designers' control, e.g., such that they could not fully dictate or eliminate them, designers can still meaningfully influence key dimensions of how an artefact will likely function in specific contexts, helping steer or limit some of the more (un)desirable outcomes. Secondly and relatedly, just because designers cannot have full control over conceptual affordances, this does not undermine the utility of investigating affordances to anticipate a broader range of possible uses of artefacts (beyond their intended functions), which can meaningfully inform design projects. In short, while retaining absolute control over all affordances is unrealistic, this does not mean that any efforts to pre-emptively address, accommodate, or mitigate affordances, whenever possible, will be futile and should not be encouraged.

Having outlined the notion of affordances with regard to artefacts, I suggest that a similar affordance-theoretic perspective can be meaningfully extended to the conceptual domain. Just as artefacts afford possibilities for action depending on their features, users, and contexts, I propose that concepts afford possibilities for action, use, or thought, depending on the interplay among concepts, users, and the contexts of use. In what follows, I explicate and justify this extension by examining how affordances manifest in the conceptual realm.

A step-by-step clarification of this move is in order. If we accept the assumption (widely shared in the conceptual engineering literature) that concepts have functions, it seems reasonable to further assume that conceptual functions are not limited to the

functions that concepts *should* serve. Just as artefacts may serve multiple purposes beyond their intended function, concepts may exhibit a broader range of functions than what they are specifically intended to accomplish. While intended functions refer to what concepts *should* do, the broader range of conceptual functions captures what concepts *could* do. At this point, the move from functions (broadly understood) to affordances becomes apparent. Affordances capture what a concept enables us to do, i.e., the potential actions and uses that emerge from the combination of a concept in a given context and with regard to a given user.[6] Consequently, if conceptual engineers accept that concepts have functions broadly understood (including both intended and unintended functions), they should plausibly also accept that concepts have affordances—just like artefacts do.

Ultimately, understanding conceptual functions through the lenses of the notion of affordances can provide more solid and comprehensive guidance for conceptual engineering projects, by enabling conceptual engineers to gain a more rounded understanding of the arrays of conceptual uses that are (and should be) relevant for conceptual engineering purposes. This, in turn, can enhance and guide conceptual evaluation, (re-)design, and implementation.

Whether artefactual or conceptual, affordances exhibit three salient features: they are typed (as invitations for use or mere possibilities for use), graded (as stronger or weaker), as well as dynamic and multi-stable (shifting across contexts, users, and times). The following sections examine each dimension in turn, first for artefacts, then for concepts.[7] While the discussion remains neutral with respect to competing theories of concepts, I illustrate how affordances are instantiated across three leading theories of concepts—concepts as mental representations, as inferences, and as prototypes—, thereby underscoring the meta-theoretical neutrality and operational flexibility of the affordance-theoretic approach.

[6] Here, it is relevant to note that functions and affordances can be understood in terms of each other. On the one hand, affordances could be framed through the lens of functions. In this view, affordances would represent the full range of possible functions a concept has, including but not limited to its intended functions. On the other hand, one could understand functions through the lens of affordances. In this sense, functions would be interpreted as the actions that a concept enables in a given context and with respect to a given user, encompassing not just what the concept *should* enable, but the full range of what it *can* enable in different contexts. Here, I deliberately skip the intermediate step of considering possible functions as a helpful bridge between intended functions and affordances, as this would introduce unnecessary complexity. Specifically, distinguishing between possible functions and affordances is both unnecessary and undesirable. It is unnecessary as there is little benefit to stretching the notion of function when the notion of affordance already captures the full range of what concepts *enable* us to do (their possible functions). Furthermore, it is undesirable as over-inflating the notion of function to collapse onto that of affordance would risk conflating the two concepts and generate confusion. This point will be expanded upon in Sect. 3.1.

[7] It should be noted that the notion of affordance first originated to shed light onto the possibilities for action offered by artefacts. In this paper, I will focus on conceptual affordances. The move from artefacts from concepts is justified to the extent that concepts are oftentimes taken to be artifactual in some salient respect (Thomasson, 2021; Margolis & Laurence, 2023; Veluwenkamp & van den Hoven, 2023). In this sense, I do not wish to argue that concepts are (socio-technical) artefacts, but merely to adopt this well-established analogy as a heuristic device to illustrate how affordances can inform conceptual engineering (e.g., Chalmers, 2020; Köhler & Veluwenkamp, 2024). For a more in-depth illustration of the similarities between artefacts and concepts that lays the groundwork for such a comparison, see Marchiori (Ms).

2.1.1 Types

First, affordances can be differentiated based on their type—that is, whether they are intended invitations for use or (non-)canonical possibilities for use. Affordances are often described in terms of possibilities for action (or use; Gaver, 1991; Glăveanu, 2020; Borghi, 2021; Tollon, 2022; Koutamanis, 2023). These possibilities can manifest in different ways depending on the features of the artefact (or concept), the context of use, and the user. Here, I find it helpful to further qualify affordances by distinguishing between intended and unintended affordances, depending on the involvement of the designer (or lack thereof).[8] Therefore, one may understand affordances broadly as possibilities for use, which can be further classified as invitations for use (specifically intended uses) and mere possibilities for use (general potential uses).

Affordances understood as *invitations for use* refer to the potential actions that an artefact (or concept) explicitly supports or enables due to the designer's intentions. For example, a wooden chair may afford sitting because its design and structure make it suitable for that purpose. This is an intended affordance, where the artefact's design explicitly invites a particular use. Similarly, the concept CONCEPTUAL ENGINEERING invites a normative approach to conceptual work, e.g., one that encourages tinkering with concepts as one would do artefacts (Chalmers, 2020). However, affordances need not align with the designer's intentions.

Affordances understood as *mere possibilities for use* refer to the general potential actions, uses, and thoughts that a given artefact (or concept) enables. These are the inherent possibilities that arise from the interaction among a given artefact's (or concept's) features, the context of use, and the user. For example, a chair can be used to stand on to reach a high shelf, even if it was not specifically designed for that purpose. However, this depends on a combination of the chair's features (e.g., a small plastic chair may be not well-suited for an adult to step on), the context (e.g., to use the chair, the floor should be stable and free of obstructions), and the user (e.g., a person with impaired mobility may not perceive the chair as at all helpful to reach the shelf).

Likewise, the concept DISORDER can afford drawing different inferences depending on the context.[9] In a clinical setting, DISORDER may afford drawing specific infer-

[8] This reflects a similar distinction made in the literature between intentionally designed affordances and unintended affordances. By way of example, Norman (1988, revised 2013; 1999) distinguishes between affordances that are intentionally designed and those that are not. Similarly, Shneiderman (1992) touches on the difference between intended and unintended affordances in the context of user interface design, while discussing how designers often build user interfaces that afford certain actions, but users may discover alternative ways of interacting that were not intended by the designers. More recently, Bennett and Bennett (2012) tackle the impact of unintended affordances in user experience, understood in terms of products or interfaces being used in ways that the designers did not envision, thus suggesting a distinction between the two.

[9] The inferentialist view of concepts understands concepts as inferential roles, e.g., nodes within a web of normative commitments and inferential roles (Sellars, 1953; Brandom, 2009). On this view, to possess a concept is to grasp the inferences that it licenses and what follows from its application within a given discourse. Concepts are thus defined by the inferences that they allow, the social roles they instantiate, and the actions they justify or prohibit. For example, the concept book is not defined merely by its

ences, e.g., related to the need for diagnosis and the possibility of treatment. These inferences are shaped by the medical system, the expertise of practitioners, and the tools at their disposal, such as diagnostic tests and therapeutic protocols. In contrast, in a social context, DISORDER may prompt different inferences, such as associations with stigma, exclusion, or deviance. These inferences are influenced by the features of the social environment, such as prevailing negative attitudes toward mental health or other types of disorder, leading to marginalisation or exclusion.

One can further distinguish affordances intended as mere possibilities for use between canonical and non-canonical affordances, i.e., expected and unexpected possibilities for action, respectively (Arnold et al., 2023). Canonical affordances refer to the possibilities for action that, while not explicitly intended by the designer, are nonetheless expected or foreseeable based on the features of the artefact (or concept) and the conventional contexts in which it is employed. For example, although a chair is designed primarily for sitting, using the chair to stand on to reach a high shelf is an expectable, albeit unintended, use of the chair. Similarly, the concept SALAD affords thinking of dishes such as *pasta salads* or *fruit salads*. While the prototype of SALAD centrally features a cold mixture of small, edible components—typically vegetables, traditionally leafy greens—, the salient properties of mixture, cool serving temperature, and combinatory preparation make it expectable that other ingredients, such as pasta or fruit, can be substituted while retaining categorisation as a salad.[10]

By contrast, non-canonical affordances arise in ways that are neither intended nor expected. For example, the same chair may afford shelter from the sun with its shadow, it may be used to prop open a door, or it may become part of as a sculpture in an art installation, such as in Joan Miró's *Seated Woman and Child*. The parallel in the conceptual realm may be the following. Under a definitional view of concepts, SOUP would typically be understood through necessary and sufficient conditions such as involving a cooked liquid base combined with edible ingredients. However, in informal settings, such as social media and playful legal or philosophical debates, users may extend the concept SOUP in unexpected ways. For instance, by construing ocean water as broth and seaweed as vegetables, by pointing out the presence of fish, and by treating geothermal and solar processes as forms of cooking, one may extend the concept SOUP to the ocean. This reasoning recontextualises the defining features of SOUP to fit novel cases, generating a non-canonical affordance of the concept.[11]

physical properties (e.g., having pages or being readable), but by its place within a network of inferences (e.g., being cited in academic work, being subject to copyright law) and the social practices that those inferences enable.

[10] The prototype theory of concepts holds that concepts are organised around cognitively salient examples or typical feature clusters, rather than being strictly defined by necessary and sufficient conditions. On this view, to possess a concept is to recognise its central and peripheral instances based on similarity to an idealised prototype (Rosch & Mervis, 1975; Lakoff, 1987). For instance, the concept BOOK is prototypically linked to objects with a cover, printed pages, and textual content meant for reading. Variants like audiobooks or eBooks may be considered less typical members of the category. Conceptual affordances—what a concept invites or allows users to think and do—are shaped by these prototypes: actions and expectations are anchored in the features most salient to the prototype and may shift as prototype structures evolve through cultural, technological, or experiential change.

[11] The definitional view of concepts holds that concepts are structured by a set of necessary and sufficient conditions that jointly determine category membership. On this view, to possess a concept is to know,

2.1.2 Degrees

Second, affordances can differ in degree, depending on how strongly or weakly they invite or enable specific actions, uses, or thoughts. That is, artefacts (and concepts) can bear higher and lower affordances (Maier & Fadel, 2007). The more intuitive and automatic the use of an artefact (or concept), the higher the affordance. Once again, the determination of the strength of an artefact's (or concept's) affordances depends on the interaction among the artefact (or concept), the context in which it is used, and the person using it.

Therefore, as illustrated in the Hitchhiker's example in Sect. 2.1, one may argue that towels bear higher affordances with regard to their practical uses and lower affordances for their psychological uses. Indeed, the very reason why towels have immense psychological value for interstellar hitchhikers is precisely because they enable specific uses, which are not intuitive, but rather specific to interstellar hitchhikers.[12] If non-hitchhikers were to intuitively capture towels' possibilities for use as means to be perceived as being worthy of respect, regardless of one's actual merits, towels would bear higher affordances for their psychological function for hitchhikers and non-hitchhikers alike and, quite ironically, lose that very function for interstellar hitchhikers.

Analogously, the concept BOOK helps individuals identify certain objects as suitable for reading, annotating, and knowledge acquisition. However, for users primarily familiar with digital media, some of the traditional affordances of BOOK may be weaker, such as expectations tied to physical interactions with printed volumes, e.g., the action of flipping physical pages. Conversely, other affordances arising from more peripheral or contested inferential paths may become stronger, such as notions of books as means for interactive learning, or audio narration. Similarly, one might observe differing degrees of affordance strength when considering the concepts FUNCTION and AFFORDANCE themselves within the practice of conceptual engineering. Particularly because of its widespread entrenchment in conceptual engineering discourse, the concept FUNCTION strongly affords its application in evaluating the adequacy of concepts. By contrast, while AFFORDANCE also offers a powerful lens for assessing conceptual adequacy, its affordances in this evaluative role are comparatively weaker. This is not due to any inherent deficiency of the notion, but because AFFORDANCE is less established within the conceptual engineering community. While both concepts can be used for the same purpose, their respective affordances differ in strength, e.g., according to users' disciplinary backgrounds, prevailing theoretical

explicitly or implicitly, the defining features that an object or instance must have to fall under the concept. For example, the concept BACHELOR is traditionally analysed as requiring that the person be male, adult, and unmarried. Conceptual competence, in this framework, consists in correctly applying the concept on the basis of these definitional features. Conceptual affordances thus derive from the logical structure of these definitions. Novel or non-standard applications emerge when definitional features are reinterpreted, stretched, or applied under atypical conditions, often revealing tensions or ambiguities within the definitional schema itself.

[12] This is what Gaver (1991) would describe as a *hidden* affordance. That is, despite an artefact bearing a particular possibility for action, such an affordance is not perceived by the user.

frameworks, and the context of inquiry. Thus, affordances' strength is graded and modulated by users' background and the context of use.

2.1.3 Dynamism and multi-stability

Third, affordances are dynamic and multi-stable, shifting across users and contexts. That is, the understanding of affordances as invitations for use and possibilities for use, as well as their degree, may differ vastly depending on the users involved and the context of use. Indeed, different users may perceive the same affordances as more or less intense.

Consider a chef's knife. To a professional chef in a kitchen, the knife, with its sharpness, balance, and handle, invites a range of skilled uses, such as cutting, slicing, dicing, and chopping food. In this context, the affordances for the intended uses of the knife will be strong because the knife's design aligns with the user's expertise. Conversely, in the hands of a child, the very same knife's affordances may shift significantly. While the knife still physically affords cutting, slicing, dicing, and chopping, the child's lack of skill and awareness of the knife's potential functions leads to lower affordances for its intended uses. Again, while interacting with a smartphone, elderly users may perceive higher affordances for making calls, while perceiving low affordances for sending texts, and not perceiving the smartphone's affordances for social media usage. Conversely, younger users may perceive higher affordances for the use of apps, among which social media and games, while perceiving low affordances for making calls.

Therefore, it is crucial to be mindful of the fact that artefacts (and concepts) can be perceived and used differently by different individuals and across various communities and cultures. In the engineering and design literature, such insights have led to research emphasising the importance of user-centred design in creating intuitive affordances for use, whose focus is on designing objects that clearly communicate their potential interactions to users (e.g., Norman, 1988, 1999).

Context also greatly affects affordances. Consider once again the professional chef and their knife. Were the chef no longer in their kitchen, but stranded in the wilderness, their knife may afford a broader range of uses beyond cutting food: it could be used for carving tools, making fire kindling, or self-defence. The survival context amplifies the salience of these affordances, which would be weaker in the everyday setting of a kitchen, while cloaking the knife's intended possibility for use. Again, in a symbolic context, the chef's knife could afford yet another set of possible actions. For example, in certain ceremonial practices, the knife might not be used for cutting at all but rather as a symbol of power or authority.

A similar pattern can be observed in the conceptual realm with the notion of ARTIFICIAL INTELLIGENCE. For the same user, ARTIFICIAL INTELLIGENCE may afford different possibilities for use and thought depending on the context of reference. In a technical setting, such as a machine learning conference, ARTIFICIAL INTELLIGENCE may strongly afford precise inferential and operational uses, invoking notions such as algorithmic modelling, supervised and unsupervised learning, or computational complexity. Here, the concept's affordances are tightly coupled to specialised, technical meanings and actions. In contrast, in a lay conversational context, the very same user

may deploy ARTIFICIAL INTELLIGENCE with affordances related to popular narratives, such as automation, humanoid robots, or existential risk. The concept's affordances dynamically shift according to the context of use.

These examples illustrate the multi-stability of affordances, where the same artefact (or concept) affords a wide range of possibilities for use, shaped by the interaction among the artefact (or concept), the user, and the context of use. As relational properties, affordances are not static, but dynamic in nature, and evolve as technology and user interactions change. That is, as artefacts (or concepts) and users change or interact with new contexts, artefacts' (or concepts') affordances can also change. For example, the dynamic nature of affordances means that today's (non-)canonical possibilities for use could become invitations for use tomorrow—such as when designers find ways to repurpose unintended affordances into intended ones. Relatedly, this means that (conceptual) engineers must continually reassess the possibilities for use of concepts. In the words of Heras-Escribano (2019), the notion of affordances uncovers "a meaningful world of promises and threats" (2019, p. 1). This has salient implications for the (ethical) design and maintenance of artefacts (and concepts).

One additional consideration is in order. When affordances are acted upon, side-effects may emerge. Consider a smartphone. The design of a smartphone affords several interactions: it can be used for making calls, sending messages, taking photos, browsing the internet, and more. Each of these interactions is a possibility for use that the smartphone offers to its users. The phone's touchscreen, buttons, and apps, are all designed with specific affordances in mind. In contrast, while the design of the smartphone does not invite its users to use it to emit electromagnetic radiation, this is an unavoidable side-effect of its electronic components.

The engineering literature on the unintended consequences of artefacts highlights how side-effect are often discovered post-design and require mitigation strategies. As a result, there is a growing trend to anticipate side-effect and either minimise their negative impacts or transform them into beneficial possibilities. When this occurs, side-effects may themselves become affordances. For example, the electromagnetic radiation emitted by the smartphone can become a designed affordance if it is harnessed for wireless charging or data transmission. In such cases, what was once a side-effect becomes a possibility for use through intentional design modifications.[13]

Taken together, these three features of affordances—i.e., types, degrees, and dynamism—highlight affordances as a rich, context-sensitive framework for understanding how concepts can invite or constrain actions, uses, and thoughts beyond their intended or desired functions.

[13] It is important to distinguish between unintended affordances and side-effects, as they operate at different levels of analysis. Indeed, while affordances refer to the potential actions or uses that an artefact (or concept) enables in relation to a user and a context, side-effects refer to the actual, often unintended, consequences that result from the mere existence or deployment of an artefact (or concept). Although unexpected affordances may lead to unforeseen side-effects, the two should not be conflated: affordances capture the range of possibilities for (inter)action, whereas side-effects represent the realised outcomes of those interactions, often independent of the user's knowledge and intentions. For example, in the case of concepts, side effects may occur when the introduction or use of a concept leads to unintended restructuring of behaviours, expectations, or institutions.

2.2 In which sense do concepts enable or constrict our actions and thoughts? Concepts, language, and society

In the previous sections, I illustrated how, when users are presented with an artefact, they are invited to use it in particular ways. I argued that the same extends to concepts. Intuitively, one of the salient differences between artefactual affordances and conceptual affordances seems to be that (socio-technical) artefacts are only partially determined by their function and are also determined by their physical properties (the so-called "dual-nature" of technical artefacts, Kroes & Meijers, 2006). As such, artefacts' physical constraints shape and limit the range of affordances that they bear.

At a first glance, such constraints seem to be largely missing in the case of concepts. Still, as pointed out by Houkes and Vermaas (2010) with regard to technical artefacts, the fact that constraints are not clearly visible does not mean that they are absent. Rather, some features of artefacts may be obscured and need to be unveiled. For example, the physical constraints of digital artefacts may not be missing but merely rendered opaque. A similar mechanism may be at play with concepts. Indeed, while concepts do not seem to have noticeable physical constraints, they may nevertheless be constrained in some salient respects. In this section, I briefly expand on the extent to which the linguistic items used to express concepts may be interpreted as constituting one of such constraints. Discussing conceptual affordances with regard to the linguistic medium of concepts picks out an interesting duality.

On the one hand, one could understand the linguistic medium as a necessary vessel for concepts, such that one cannot neatly disentangle concepts from the linguistic items used to convey them. On this view, language may be to concepts what materiality is to artefacts. Therefore, similarly to the material conditions of artefacts, the linguistic items through which concepts are articulated may themselves be interpreted as a constraint that restrict or enable concept users' actions and thoughts.[14] For example, consider how the term "man" may refer to both the concepts MALE HUMAN BEING and HUMAN BEING, while the term "woman" is typically taken to refer solely to FEMALE HUMAN BEING. One may argue that using the term "man" to convey the concept HUMAN BEING constricts our actions and thoughts in ways that using the term "human being" to convey the same concept does not, e.g., to the extent that it can lead to framing male experiences as universal and the norm, but female or non-binary experiences as distinctly confined to the female and non-binary world, respectively.[15] In other words, to the extent that concepts and the linguistic items used to express them are inevitably interlinked, focussing on the affordances of a concept detached

[14] The idea that the limits of language are the limits of one's world is famously attributed to Wittgenstein (1922). This intuition is in accordance with studies suggesting that language and its structure affects its speakers' worldview and cognition, by shaping thought processes and influencing the perception of the world (Sapir, 1929; Kay & Kempton, 1984; Winawer et al., 2007; Whorf, 2012).

[15] Indeed, research on gendered language demonstrates that the use of gendered pronouns and words can reinforce gender stereotypes and influence perceptions of gender roles (Boroditsky, 2006; Stahlberg et al., 2011). In Marçal's (2021) words, "[t]he problem are all the people who are not accorded the same right to be universal and how, in turn, this limits our idea of what it means to be human" (Marçal, 2021). This leads to "men's tools [being] allowed to belong to history while women's tools belong to women's history" (Marçal, 2021).

from the affordances arising from the linguistic medium used to convey it could be problematic, as it would inevitably fall short of identifying at least part of the affordances of the concept at hand.

On the other hand, one could argue that, despite concepts being frequently conveyed through language, the linguistic medium can be safely detached from the concept it expresses. However, even in such a case, attempting to identify the affordances of a concept by looking at the concept in a vacuum, detached from the socio-technical-cultural landscape in which it is embedded, would be misguided. Indeed, if conceptual affordances are influenced and co-shaped by a combination of the concept itself, the user, and the environment, then the affordances that a concept bears cannot be meaningfully identified by detaching the concept from the broader context in which it is situated, which includes (but is not limited to) the means (linguistic or otherwise) through which the concept is conveyed. Indeed, consider the ways in which language often acquires a mediating role between people and their concepts, e.g., when people speaking different languages try to use a shared vocabulary to understand and communicate with each other. Understanding and communicating concepts through the means of language can lead to constraints to the extent that linguistic items may be more or less adequate vessels to capture the concept one wants to convey.[16]

In simpler terms, while it is plausible to expect that some affordances might be purely based on inherent features of the concept (if one understands concepts and language as inextricably connected), at least some affordances will arise from extrinsic vectors depending on the interaction between the concept, the user, and the broader context (including the linguistic items through which concepts are conveyed). Ultimately, it seems that whether language is akin to the material conditions of artefacts is not crucially relevant. Indeed, while there may be a benefit in being able to distinguish whether it is the concept itself that carries certain affordances, or whether it is the way the concept is conveyed through language that introduces such affordances, both hypotheses (language-driven affordances and concept-driven affordances) seem plausible, and not mutually-exclusive.[17] As Mills (2007) writes,

> "[I]f the society is one structured by relations of domination and subordination (as of course most societies in human history have been), then in certain areas this conceptual apparatus is likely going to be shaped and inflected in various ways by the basis of the ruling group(s). So crucial concepts may well be misleading *in their inner makeup and their external relation to a larger doxastic architecture*." (Mills, 2007, pp. 24–25, emphasis added).

[16] For example, language fails us when we wish to translate the Dutch concept of "gezelligheid" (roughly, a person, object, or atmosphere, perceived as cozy, inviting, pleasant, convivial), and constrains us when we try to convey the full richness of the Farsi notion of "kirpan" (a religious object reminiscent of a knife, as in Soltandazeh, 2021), or the weighty lightness of the Italian concept of "menefreghismo" (blatant disregard for one's own duties or the rights of others).

[17] Here, I focus on the role of language in the identification of conceptual affordances. I do not wish to exclude that concepts themselves may, at least in some cases, afford possibilities for action and thought independently from the language through which they are conveyed. Similar questions are baked into the notion of affordance beyond its application in the conceptual domain, and mirror a structural feature that is already present when talking about artefactual affordances.

This suggests that conceptual affordances may be enabled by a combination of intrinsic and extrinsic factors, both of which can constrict certain forms of thought or action while enabling others in alignment with the interests of dominant groups. Moreover, such an integrated approach seems consistent with Haslanger's (2012) and Congdon's (2023) views of concepts and social practices and normative outlooks as mutually co-constitutive.

Haslanger (2012) argues that many of our concepts, especially those related to social categories like gender, race, and class, are socially constructed. These concepts are not merely reflections of natural kinds but are created and maintained through social practices and institutions. She furthermore claims that language and discourse play a critical role in shaping our concepts. That is, the ways in which we talk about and categorise the world influence how we think about it. For example, the concept WOMAN is shaped by societal norms, expectations, and language. Importantly, Haslanger (2012) highlights a feedback loop between concepts and social practices. That is, social practices give rise to and sustain certain concepts, which in turn influence and reinforce those practices. For example, the social practice of gender roles reinforces the concept GENDER, which then perpetuates such roles.

Similarly, Congdon (2023) builds on and extends Haslanger's (2012) insights. Congdon (2023) argues that concepts are not just passively shaped by social practices but are actively constructed through them. For example, evolving norms around gender equality influence the concept GENDER, which in turn affects normative expectations and social practices related to gender roles. This mutual shaping underscores the co-constitutive relationship between concepts, social practices, and and normative outlooks.

3 Conceptual affordances-informed functionalism

This section proceeds in two steps: first, I argue that functionalism should be supplemented by an affordance-theoretic approach; second, I address why functions should not be replaced altogether by affordances. Let us begin with the former. Here, I argue that functionalism should be understood through the lenses provided by the notion of affordances. That is, by considering functions as "the point of concepts", we are underselling the role that functions can and should have in conceptual engineering projects, by only focussing on what concepts *should do*. This is in line with criticism advanced by Nado (2021), who writes:

> [I] don't think we ought to limit ourselves to speaking of something like the 'proper' function of a concept. Tools, concepts included, can be used for purposes other than their 'proper' function; I can use a hammer as a paperweight, or a knife as a lever. Weighting papers may not be the proper function of a hammer, but insofar as I use my hammer for that purpose, it makes perfect sense

> to speak of weighting papers as one the hammer's (current) functions. (Nado, 2021, S1521).[18]

The current function of the hammer that Nado is referring to in the example can, and perhaps should, be better understood in terms of affordances. Relatedly, the full spectrum of conceptual uses that should be of interest to conceptual engineers (at least) for the assessment of conceptual adequacy is better captured by grounding functionalism in a theory of affordances. That is to say, by moving from the current notion of function (i.e., what concepts *should do*) to a notion of function grounded in a theory of affordances (i.e., what concepts should *enable us to do)*, conceptual engineers can achieve greater granularity in their analytic and normative approach to conceptual work. However, one may argue that, just because functions *can* be understood in terms of affordances, it does not necessarily follow that they *should* be. Here, I argue that grounding conceptual functions in a theory of affordances is not only warranted, but desirable, from the perspective of the intellectual and professional integrity of conceptual engineers.

That is, if understanding the notion of function through that of affordance gives us good reasons to think that functions alone may fail to capture the complexity of the uses that concepts can and should enable, as I suggest is the case, choosing not to pursue the investigation of the notion of affordances seems ethically irresponsible. Rather, conceptual engineers should embrace such a complexity, even if this will lead to new issues being uncovered, which may not be meaningfully solved, mitigated, or even addressed by current approaches, and for which new tools and methods may need to be devised, and indeed even if such issues may not be meaningfully solvable *tout court*.

Intuitively, it seems reasonable to expect that such considerations should be even more pressing when the concepts being (re-)engineered are lay concepts or can be expected to have an impact on the broader societal context in which they will be implemented. In such cases, failing to take into account the perceived complexity of conceptual functions and the multi-stability of concepts may lead to a rather grim picture, and may be framed in terms of conceptual engineers failing to exercise their due diligence. However, it should be noted that technical concepts which may not intuitively have significant societal impact may also become societally relevant.

Consider the concept HOLE. The metaphysics of holes has been studied extensively, most notably by Casati and Varzi (1994). Whether Casati and Varzi's work would qualify as conceptual engineering is not crucially relevant. What is relevant here is that their work contributed to the conceptualisation of the technical concept HOLE within the domain of ontology and metaphysics. The societal relevance of expert concepts such as HOLE studied from a decidedly metaphysical perspective, seemingly detached from society, should not be underestimated. Indeed, perhaps unpredictably, a few years after Casati and Varzi's (2004) book was first published,

[18] Interestingly, Thomasson (2022) herself draws heavily from Millikan (1984, 1989) in her discussion of functions framed in terms of 'proper' vs. 'accidental' functions. Similarly, the literature on the functions of artefacts in the philosophy of technology also draws heavily from Millikan's work on functions in (evolutionary) biology.

US jurists were animately discussing which conception of HOLE should be given precedent when faced with seemingly invalid electoral ballots. This was due to the poor design of the ballots, which had led a significant number of voters to express two preferences after learning they had inadvertently voted for the wrong candidate, and to some voters encountering difficulties while operating the voting machines, which resulted in some ballots not being punched through completely. Ultimately, the conceptualisation of HOLE became societally relevant and arguably played a non trivial role in determining the outcome of the US Presidential Elections.

Therefore, the process one should undertake to determine what counts as a good enough concept in a given domain should also include an assessment of the possible uses of the concepts, beyond the intended and actual uses, and the dynamism of such uses. Relatedly, it may be preferable to exercise precaution and assume that any conceptually (re-)engineered concepts may have an impact on broader society.

It should also be reiterated that an unrefined notion of affordances has already emerged organically in the conceptual engineering literature bearing other names (such as "possible function" in Nado, 2021, as illustrated above). This is not unlike the case of "conceptual engineering" itself. While many scholars and practitioners engage in normative conceptual work, only part of them refer to it in terms of "normative conceptual work" or "conceptual engineering". Consider bioethicists conceptualising "brain death", legal scholars coining the concept of "legal personhood", and physicists adapting the concept of "planet". When considering such projects from the perspective of normative conceptual work, they would neatly fit within our understanding of "conceptual engineering". However, it is possible that bioethicists, jurists, and physicists themselves would not refer to their activities in terms of conceptual engineering.

Similarly, I suggest that it is reasonable to assume that (at least) some conceptual engineers may already be using the notion of affordances without referring to it explicitly in these terms. Therefore, tapping into the rich philosophy of technology literature on affordances is warranted and desirable to the extent that it can illuminate a notion that has thus far remained under explored in the conceptual engineering literature, but which can be of great value for conceptual engineers. Taking inspiration from the philosophy of technology scholarship on affordances is particularly promising as the notion of affordances has been investigated in tandem with that of function, and the two concepts have often been mutually integrated. Moreover, engineers and philosophers of technology on the one hand and conceptual engineers on the other engage in similar activities and are motivated by similar goals. Establishing a parallel between the two bodies of scholarship is further warranted if one considers that conceptual engineers generally take concepts to be de facto artifactual in some salient respect (Marchiori, Manuscript).

3.1 Functions (still) matter. Why affordances should not replace functions

In this paper, I have argued that, despite being a helpful starting point to guide conceptual engineering projects, functionalism, i.e., the approach according to which concepts should be deemed adequate to the extent that they adequately fulfil their functions, does not fully capture the dynamic and contingent interplay between con-

cepts and their contexts of use. Specifically, over the previous sections, I have illustrated the notion of affordances, and made the case that it can, and should, inform functionalism. Indeed, affordances uncover a complex web of interdependencies involving concepts, their users, and the context of use, thus moving past merely highlighting what concepts *should* do, and rather spotlighting what concepts *enable* us to do. As such, affordances allow to cast much larger a net and capture much broader a scope of the uses that concepts allow.

In this regard, one objection should be addressed. That is, (i) if it is the case, as I argue it is, that functions alone cannot meaningfully guide conceptual engineering projects, as they can only provide conceptual engineers with too narrow an account of the considerations that should be relevant to evaluate conceptual adequacy, and (ii) if it is the case that the notion of affordances can provide a richer, more holistic framework for such an evaluation, then (iii) should conceptual engineers not discard the functional account altogether in favour of an affordances-based approach to conceptual adequacy? I argue that that is not the case.

That is, the shortcomings of the functional approach should not be bridged by extending or inflating the notion of conceptual function so as to encompass conceptual affordances. Were that the case, conceptual engineers would risk both losing a useful notion of function and still lacking adequate vocabulary to discuss the broader considerations and implications of conceptual engineering beyond those captured by functions. Rather, conceptual engineers should confront the fact that the adequacy of concepts (and, relatedly, of their evaluation, design, and implementation) cannot be understood solely in terms of their functions but require stepping out of the functional bubble and supplementing conceptual functions with conceptual affordances.

Indeed, in conceptual engineering, functions (i.e., the specific roles or purposes that concepts are intended to fulfil) are critical because they provide clear adequacy criteria for concepts: a concept is adequate only if it successfully fulfils the function(s) it *should* serve. This makes functions a useful starting point for guiding conceptual revisions and ensuring that engineered concepts meet their goals. Affordances, on the other hand, introduce breadth and complexity by considering not only what a concept is intended to do (its intended function), but also what the concept enables or constrains users to do within a given context.

Thus, despite affordances providing a more comprehensive and sophisticated framework for the assessment conceptual adequacy in holistic terms, replacing functions with affordances altogether should be discouraged, as this could dilute the precision and purpose-driven nature of conceptual engineering.[19] Indeed, while functions provide focussed normative guidance for what concepts should achieve, affordances might introduce an overwhelming variety of possible conceptual uses. It follows that understanding functions in terms of affordances may introduce the risk of overextending a concept to the point where it loses its distinctiveness and utility. When a concept is stretched too far, it becomes harder to define and apply consistently. This complexity can dilute the core meaning of concepts, making them less effective in fulfilling their intended purposes.

[19] Cosentino (2021) reaches similar conclusions through a different route.

At the same time, the role of affordances in the assessment of conceptual adequacy should not be downplayed. Indeed, consider an instance in which several competing conceptual proposals might all be deemed adequate, yet differ (even substantially) in the possibilities for action and thought that they afford. For example, while both fake news and disinformation capture the spread of false information, fake news may afford distrust, delegitimisation, and political polarisation, whereas disinformation may afford blame attribution as well as regulatory, institutional, and security-oriented responses. In such cases, just as sets of reasons for adopting one version of a concept over another can be weighed with decisive reasons favouring the concept whose reasons are weightier than those of any alternative (as argued by Köhler & Veluwenkamp, 2024), attending to the affordances of competing concepts can similarly aid in selecting among multiple adequate candidates, functioning as a potential tie-breaker.[20]

Ultimately, grounding functionalism in a theory of affordances can enrich conceptual engineers' understanding of the interaction between concepts, users, and contexts and its significance for conceptual engineering. By attending to affordances, conceptual engineers can move beyond purely functional evaluations to consider the broader socio-technical, institutional, and discursive trajectories that different concepts are likely to enable. Moreover, because conceptual affordances shape not only immediate use but also long-term pathways of meaning and institutionalisation, assessing affordances can help anticipate how concepts might evolve and what futures they make possible or foreclose.

4 Conclusion

Conceptual engineering is a normative approach to conceptual work, the purpose of which is the improvement of our concepts. To improve concepts, conceptual engineers need to have a measure of what an adequate concept amounts to. Functionalism offers such a standard. Following the functional account, concepts have functions and are adequate to the extent that they can fulfil their functions.

While traditional functional approaches have centred narrowly on the intended functions of concepts, recent contributions to the literature have enriched this view, advocating a more context-sensitive and dynamic understanding of conceptual functions (e.g., Nado, 2021; Riggs, 2021; Jorem, 2022; Queloz, 2022; Köhler & Veluwenkamp, 2024). In this paper, I built on such contributions and introduced the notion of *conceptual affordances*, understood as the potential actions, uses, or thoughts that a concept enables or constrains relative to a given user and within a given context. Conceptual affordances elaborate and refine the coarse-grained notion of *possible functions* that has emerged in the conceptual engineering literature, by tapping on the literature on artefactual functions, which draws from similar intuitions and pursues similar normative aims (Nado, 2021).

[20] Future work will focus on the articulation of practical guidelines to facilitate the operationalisation of these insights.

I argued that the move towards an affordance-informed functional approach to conceptual adequacy is not only theoretically enriching, but also crucial to address the ethical dimensions of conceptual engineering. Indeed, an affordance-theoretical approach systematically allows to consider a subset of the actions and thoughts that concepts enable and constrain, which should be deemed relevant for the purpose of conceptual engineering, but are not adequately captured by functions alone. This enables considering a wide range of (mis)uses of concepts beyond their intended roles, which should nevertheless be of interest to conceptual engineers and be considered in the assessment of conceptual adequacy.

Ultimately, an affordance-informed functional approach to conceptual engineering allows conceptual engineers to more skilfully navigate normative conceptual work, by enriching and refining the understanding of the roles of concepts and shifting the focus from what concepts *should* do to what they should *enable* us to do. Moreover, when multiple competing concepts are functionally adequate, their differing affordances can serve as a critical tie-breaking factor in conceptual selection, thereby enabling conceptual engineers to make more normatively sensitive and contextually attuned choices. Future work will focus on illustrating how such a framework can be translated into operationalisable guidelines for conceptual engineers.

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