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3 Affordances

Abstract: Digital criminologists are increasingly using the concept of affordances to examine the interplay between human actions and technology. In tracing the history and development of the concept, this chapter examines how affordance theory can be used to examine the interplay between technology and human actions in both harmful behaviors and responses to these behaviors. However, we also highlight the limitations of affordance theories, noting that affordances tell us little about *how* technologies mediate our perceptions and shape our experiences and actions.

Keywords: affordances, mediation, human–technology relations, perception

Introduction

Recently, criminologists have turned to the concept of affordances in detailing the actions a technology enables or 'affords' (Goldsmith and Wall, 2022; Ugwudike and Fleming, 2023; Wood, 2017). Insofar as the concept was originally formulated by ecological psychologist James Gibson (1979), affordances refer to action possibilities: they are what an environment, object, or artefact offers another in affording or enabling particular actions. A social media platform affords individuals the ability to dox someone through publishing personal identifying information about them (Wood et al., 2023). An online rape survivor forum affords users the ability to seek advice and tell their story (O'Neill, 2018). And an online forum affords traceability, allowing for users' digital footprints to be surveilled by authorities or perpetrators. What an artefact affords is not, however, determined by its designers. A gun affords individuals the ability to shoot, but it also affords individuals the ability to hammer nails into drywall.

The proliferation of affordance theories in recent years has produced invaluable insights that criminologists use to analyze techno-sociality, but it has also incited considerable debate over what is, and what is not an affordance. In this chapter, we detail why affordance theories offer a valuable resource for digital criminologists, dig into some of these debates about the nature and parameters of affordances to explain their importance for criminologists, ands detail some of the concept's limitations. Though affordance theories can represent a valuable tool for (digital) criminologists, we should not reduce technology to affordances, nor analyze a technology solely through the lens of what it affords users.

What are affordances?

Gibson's (1979) notion of 'affordance' was first used to refer to a specific type of relationship between animals and their environment. Specifically, Gibson understood af-

fordances to be the possibilities for action contained in a physical environment. As he put it, "the affordances of the environment are what it offers the animal, what it provides or furnishes" (Gibson 1979: 119). As Withagen et al. (2012: 251) note, under this framework, affordances are "opportunities for action." They do not *cause* behavior per se; rather, they make it possible. Notably, Gibson's definition emphasizes that affordances are relational; they arise out of a unique set of associations between an animal and its environment.

Though Gibson's original conceptualization of affordances remains influential, a raft of scholars have since refined, tweaked, and reimagined Gibson's concept (Chong and Proctor, 2020; Evans et al., 2017). Michaels (2003: 146), for example, expands Gibson's concept to also include events, surfaces, and people. The proliferation of affordance theories has led to significant debates about what should and should not be considered an affordance (Jones, 2003: 107). In detailing these debates about affordances, Michaels notes two issues that we think are particularly pertinent. The first concerns the ontological status of affordances: do affordances depend on perception, or exist independently of it? (Michaels, 2003: 136). On this, Michaels is firm: affordances exist independent of perceptions, and are properties of environments and objects, not minds. The second point of debate is whether affordances are necessarily related to actions: are they action-related or can they refer to other non-action-related phenomena? Michaels argues—compellingly, we think—that affordances should be action-related, noting that including other phenomena would risk the concept losing much of its analytical specificity (Michaels, 2003: 138).

A further area of debate concerns the presuppositions about perception that underpin affordance theories. Contra the view that perception is 'indirect' and constructed through the interpretation of sensory data, Gibson (1979) understood perception as a direct process. As Jones (2003: 107) details, in Gibson's conceptualization of affordances, affordances have inherent meaning "which is detected and exploited by the animal without mental calculation." However, as Scarantino (2003) details, the concept of affordances need not be tethered to Gibson's direct theory of perception (see Chong and Proctor, 2020), which has been critiqued by proponents of indirect perception theories on a variety of grounds (see Rock, 1997).

Types of affordances

While the notion of affordance has been used in a wide variety of fields, its most notable adaptions have been in design and human–computer interaction studies. For example, Norman (2013: 11) describes affordances as the relationship "between the properties of an object and the capabilities of the agent that determine just how the object could possibly be used." Norman (1999; 2013) helpfully distinguishes between real affordances—action possibilities in an environment that may remain latent—and perceived affordances: action possibilities in an environment that are perceived by an individual. This is, of course, far from the only useful categorization of affordances proposed with-

in the field. Others have, for instance, proposed that affordances can be hidden (possibilities for action not perceived by an actor) (Gaver, 1991), 'proper' (intended by designers) or 'accidental' (unintended by the artefact's designers) (Kroes and Franssen, 2015).

A further useful innovation can be found in Nagy and Neff's (2015: 5) concept of imagined affordances, which they define as users' "expectations about their communication technologies, data, and media that, in effect and practice, shape how they approach them and what actions they think are suggested." In proposing this notion, Nagy and Neff (2015: 2) argue that accounts which locate affordances in a specific set of platform features fail to account for users' perceptions, beliefs, and understandings of technology. To account for these critical factors shaping individuals' use/avoidance of a technology, the concept of imagined affordances draws our attention to what individuals imagine a technology is for (Nagy and Neff, 2015: 5; see Ross et al., 2022). For example, Schellewald (2023) notes that while the material affordances of Tiktok are similar to other social media platforms, it is imagined by its users to form a kind 'feel good space,' despite sharing many similarities with other platforms.

Affordance theories have also been adapted to explore questions around discriminatory design and users who are excluded from or harmed using objects (Wittkower, 2016; Costanza-Chock, 2020: 39). The concept of disaffordances (Wittkower, 2016) has been used to describe objects which fail to recognize various aspects of users, and in doing so constrain their ability to use the artifact. A staircase disaffords access to a wheelchair user, while a fingerprint lock disaffords access to those whose fingerprints are not registered (Wittkower, 2016; Costanza-Chock, 2020: 39). Recently, Wittkower (2016) has also proposed the category of dysaffordance, which refers to objects that not only fail to recognize aspects of users, but also *actively requires* them to misidentify themselves to gain access to their functions. A form that requires a user to enter a gender, but that only allows for binary male and female gender identities may require transgender and non-binary users to misidentify themselves. In doing so, this dysaffordance can produce a new form of biometric identity for the user (see Biometric failure by Din and Magnet); an identify that has the potential to cause significant harm when it is seen to constitute a core identify for the user (Magnet, 2011).

Affordances in digital criminological scholarship

Affordance theories have a wide variety of applications in digital criminology. As Quinn and Grove (2018) note, affordances can help us explain "how [the] features of particular contexts present a possibility for criminal behaviour." To that end, criminologists have recently begun to use affordance theories to conceptualize how technologies can facilitate violence (Henry et al. 2020; Mitchell et al., 2022) such as using Twitter's targeted advertisement features to abuse transgender people or using the like and share features of social media platforms to facilitate the spread of gender-based hate

(Henry et al., 2020). The notion of affordances appears in recent criminological efforts to explain how harms can arise from the use of digital technologies like internet-based media (Goldsmith and Wall, 2022; Quayle, 2021; Wood, 2017) as well as non-digital technologies such as guns (Goldsmith et al., 2022). In Henry et al.'s (2020) review of technology-facilitated violence, they highlight the importance of the affordances of social media platforms; emphasizing the need to pay attention to the role of non-human components in addition to human perpetrators when researching abuse tactics (see Abuse by McAlinden).

Beyond technology-facilitated violence, criminologists have invoked affordances in examining criminal justice agencies' communication and policing practices. Criminologists have explored the ways in which police make use of digital affordances to communicate with the public (Fielding, 2023), as well as how the affordances of social media have changed the nature of policing by increasing the opportunities available to offenders and requiring new investigative skills from police (Ballucci and Patel, 2022). Further, criminologists have invoked affordance theory in examining technologies designed to prevent or respond to harms, including substance use disorder recovery apps (Ross et al., 2022), sites for reporting street harassment (Fileborn, 2020), and 'personal safety' apps (Wood et al., 2022). Here, it is important to distinguish between the actions these technologies afford, and the impacts of these technologies: a 'personal safety' app may provide users with affordances for self-surveillance, but these affordances may have no impact on reducing an individual's probability of victimization (Maxwell et al., 2019: 245) and may serve to promote harmful rape myths (Bivens and Hasinoff, 2018).

The constraints of affordance theories

Affordance theories themselves have affordances and constraints: they allow us to analyze objects, environments, and technical artefacts in certain ways but not others. It is, for one, important to emphasize that not every relation between human and technologies is an affordance relation (see Ihde, 1990). Technologies often contribute to harms without being *used* (Wood, 2025). Children's long-term exposure to lead through water pipes and paint dust can, for example, produce neurological changes that may increase their propensity to engage in physically violent behavior (Higney et al., 2022). However, it is not the affordances of these lead-containing technologies that matters in explaining how these technologies contribute to rates of violence. Similarly, when discarded e-waste causes harm to the environment and non-human animals, the affordances of the specific technologies matter little to digital and green criminologists studying this harm (Bedford et al., 2022).

More broadly, because the concept foregrounds the perception and agency of actors (see Agency by Krasmann), affordance-centered analyses can foreclose questions of what technologies *do to* actors in favor of examining what actors can *do with* technologies (Wood, 2021; 2025). Though the question of what actors can do with technolo-

gies is important, it represents only one dimension of techno-sociality, and digital criminologists may benefit from situating affordances within: 1) non-teleological processes; 2) the emergent properties of techno-social structures; and 3) processes of technological mediation.

As Evans et al. (2017: 40) emphasize, affordances are not outcomes; they are, rather, "the relational link among the object, user, and outcome." Digital criminologists therefore need to examine not only what individuals can do with technologies, but also the often non-teleological processes and outcomes that result from actors using these affordances. For example, in analyzing online justice-seeking behaviors (see Digilantism by Trottier), we should examine not just the affordances that social media platforms provide for informal justice-seeking, but also the "socio-technical processes through which online justice unfolds" (Wood et al., 2019: 387), including information diffusion within social media ecologies (see Ugwudike and Fleming, 2023). Though information diffusion on social media is contingent on the information sharing affordances of social media, it cannot be reduced to these affordances. Information diffusion on social media platforms is not a teleological process: it does not result from a single actor using technology in order to achieve a particular goal. Moreover, the impacts of patterns of information diffusion—including internet virality—fall beyond the scope of an analysis centered solely on affordances. There are, in short, a range of structural, institutional, or systemic harms that implicate the affordances of (digital) technologies but cannot be explained solely through recourse to these affordances (see Ugwudike and Fleming, 2023).

Finally, as several researchers have emphasized (Verbeek, 2005; Withagen et al., 2012), we need to distinguish between what a technology enables (its affordances), how it enables, and how it invites particular actions (see Wood et al., 2023; Davis, 2020). One distinction that is helpful is Dreyfus' (2007) distinction between 'affordance facts'—what an object enables an individual to do—and 'affordance solicitations': how an object's affordances suggest, invite, or solicit actions among individuals. Importantly, while affordance solicitations can be intended by an artefact's designers, they need not be so. For instance, the drive tip of a Phillips head screwdriver may communicate that it can be used to turn remove Phillips head screws—the use intended by its designers. However, during a violent altercation the screwdriver's sharp drive tip may communicate to an individual that it can be used as a weapon—a use entirely unintended by its designers (see Wood et al., 2023).

Conclusion

Used effectively, the concept of affordances can offer a useful theoretical tool for avoiding technological (and social) determinism in examining the interplay between technology and human actions. In particular, we think that distinguishing between affordance facts and affordance solicitations provides a particularly promising avenue for understanding how affordances contribute to causal processes. While affordance facts pro-

vide a backdrop of possibilities, it is affordance solicitations that actively encourage or invite (Withagen et al., 2012; Verbeek, 2005) certain behaviors in certain conditions (Wood et al., 2023). However, if digital criminology is, as Smith et al. (2017: 263) originally suggested, concerned with how digital devices/data mediate experiences, impressions, and processes of crime/crime control, then the concept of affordances should only represent part of the theoretical toolkit scholars in the perspective utilize. Accounting for the actions that a technology affords will often be central to digital criminological scholarship. Yet, detailing an object's affordances accounts for just one dimension and form of technological mediation. A technology's affordances tell us little—and sometimes nothing—of how digital technologies mediate our perceptions, and often subtly influence our behavior, whether through algorithmic curation, recommendations, and 'hypernudges' (Yeung, 2017), shaping our routines and sociations (Robberechts and Beyens, 2020), or through exacerbating forms of digital inequality that further harm already marginalized populations (Reisdorf and DeCook, 2022).

Main takeaways

– Affordances are an important way of understanding the interplay between technology and human actions.
– Digital criminologists should be mindful of the specific conceptualization of affordances their work presupposes and avoid conflating different affordance theories underpinned by different assumptions about perception.
– Not all human–technology relations are affordance relations.
– Though the question of what technologies afford people is important, it represents only one dimension of techno-sociality, and digital criminologists may benefit from situating affordances within non-teleological processes, the emergent properties of techno-social structures, and processes of technological mediation.

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