

4 Mechanisms of Affordance

On a chilly day in the winter of 2015, I stood in a classroom talking with the students enrolled in my Cultural Studies of New Media course. The topic of the day was affordances. After a background lecture about the evolution of structure and agency debates in science and technology studies, I introduced the main concept and jumped into examples. My primary objective was to grapple with analytic tensions between technological constructivism and technological determinism. The first example was a fence. A fence does not impose impenetrable borders, I said, but it *affords* spatial restriction. After moving on with a few more examples and some back and forth between myself and the students, a bright young man raised his hand and pointed out that there is a substantial difference between a fence made of wood and an electric fence and that both are distinct from rope fencing. We all agreed and discerned that while the rope fence *asks* you to respect a boundary, the wood fence *tells* you to do so, and the electric fence *insists*.

This student had tapped into a longstanding critique of affordance theory. Although both Gibson and Norman constructed affordances as nuanced gradations, the concept has been applied in a largely binary fashion. That is, analysts who employ the

concept do so as though objects either afford or do not afford some function. But like the fence example, objects afford in varying degrees, and their effects are exerted with differing levels of force. The rope asks, the wood tells, and the electricity insists.

Over the years, scholars have tried to get outside of affordance binaries. For example, as discussed in chapter 2, William H. Warren introduced a mathematical formulation to calculate the “climbability” of stairs.¹ The ratio of leg length to stair height makes a set of steps range from optimally climbable to entirely unclimbable, with a series of accessibility variants in between. His theoretical point was that affordances are not present or absent but present and absent, by degree. Objects do not just afford or not afford but push and pull with more and less pressure. Sandra K. Evans and colleagues highlight this point in their treatment of affordances as mediators between features and outcomes,² while Rob Withagen and Harjo J. de Poel point out that affordances are not mere opportunities for action but situationally variable invitations.³

Despite empirical and theoretical advances, binary renderings of affordance remain widespread.⁴ A binary model of affordance translates to either-or renditions of what an object enables and constrains. Either you can document images with a device, or you cannot; either you can avoid surveillance on a platform, or you cannot; either an object is mobile, or it is tethered in place. For anyone who has engaged with any technology, this either-or rendition is likely inconsistent with experience. Documenting images may be more or less difficult, avoiding surveillance may be automatic or require savvy, and an object may be easy to move, cumbersome to move, or firmly fixed in one location.

I contend that affordance’s binary problem is rooted in an entrenched but misguided orienting question. Analysts ask

“What does this object afford?” when the more appropriate question is “How does this object afford?” Altering the question in this small way—from *what* to *how*—reconfigures affordances as continuous and dynamic rather than static and binary. The remainder of this chapter is dedicated to operationalizing the *how* of affordances.

Proper operationalization is critical for transforming a continuous conceptualization of affordance into a practical analytic tool. Expanding on previous work, I suggest a framework in which technological objects do not just afford or not afford but request, demand, encourage, discourage, refuse, and allow. Requests and demands are bids placed by technological objects, on user-subjects. Encourage, discourage, and refuse are the ways technologies respond to bids user-subjects place upon them. Allow pertains equally to bids from technological objects and the object’s response to user-subjects. Together, these make up the *mechanisms of affordance*.

Before diving into each mechanism, I need to say a bit about how this part of the framework operates. First, the mechanisms are not prescriptive. That is, request, demand, encourage, discourage, refuse, and allow are not concrete categories into which technological features essentially or inherently fall. Rather, these are analytic stopping points that help describe the intensity with which technological objects facilitate or impede particular lines of action and social dynamics. These categories could go by other names, and there could be more or fewer categories. These are meant as a set of hooks on which analysts can hang their descriptions, comparisons, and points of debate.

Related to the flexible (rather than rigid) nature of affordance mechanisms are the porous boundaries between categories. Features may not fit cleanly into one mechanism category or

another. Rather, the affordances of an object can slip between categories or rest within the margins. A strong discouragement may also be read as refusal, just as a weak demand may be read as a request. Concretely, this means that analysts and practitioners could reasonably disagree about whether something is a request or a demand, engage in lively disputes about whether something is encouraged versus allowed, and go back and forth internally about whether some action is refused or merely discouraged. This uncertainty is a strength of the framework. It creates a nimble analytic tool that serves—rather than stifles—dynamic readings and renderings of technological objects in society. It also creates a common vocabulary for knowledge sharing, theory building, critique, and debate.

Requests and Demands

Requests and *demands* refer to bids that originate with the artifact. They are initiated by the technological object and guide the user in some direction, with varying degrees of resolve. *Requests* indicate preference for some line of action over others, and *demands* render one line of action inevitable and other lines of action implausible. Although requests and demands originate with the artifact (rather than the user), they are rooted in sociostructural dynamics. Humans design, build, and distribute technological objects and infrastructures. How these objects and infrastructures guide human behavior arises from and is situated within existing social systems.

Requests

When a technology *requests*, it emphasizes a particular set of actions, deemphasizing other action possibilities. A user may

abide by a request, ignore a request, or address it only partially. A request necessarily entails a degree of flexibility. The technology persuades in one direction but leaves alternate options open.

Recalling the fence example from above, we might say that the rope fence *requests* that walkers stay within or outside the perimeter. The rope indicates a preference, but passers-by may easily step over the rope or dip under it. Both the twine around newly seeded grass and the velvet ropes that guide people through long and winding queues shape movement patterns but do so in ways that can be readily overcome. The material of these fences and their arrangement in space can do little to stop someone who wishes to breach the barrier. Thus, the rope fence does not force people out or keep people in but asks them not to intrude or to remain on a designated path.

Continuing with this example, we can see that the strength of a *request* will vary between different kinds of rope fencing, even if the ropes do not differ in physical restraint. For instance, yellow barricade tape adorned with police iconography likely strengthens the force of a rope's request. That is, the police tape makes a stronger request than an unmarked piece of brown twine. Although the materiality of twine and flimsy plastic are not substantially different in their physical capacity to prevent breach, the police tape is bolstered through the semiotics of institutional legitimacy and sometimes actual capacity for punitive measure. The police tape is firmer in its demarcation of a space as off-limits and creates more solid barriers to entry than an equally permeable twine fence without institutional markers.

Variation in the affordances of police tape even persist between jurisdictions due to varying legal ramifications. In 2017, for instance, a Republican member of the Missouri House

of Representatives named Galon Higdon proposed (unsuccessfully) House Bill 37 (HB37), which would make crossing a police border a class A misdemeanor. Breaching a cordoned off area could be punishable by a criminal record, up to a year in jail, and an up to \$1,000 fine. Defending the bill, Higdon told reporters, “Right now, [the police border] is pretty much a request.”⁵ Apparently, Higdon wanted to move it closer to a *demand*.⁶

The significance of this distinction between plain twine and police tape and between police tape under distinct legal codes is twofold and holds relevance for the mechanisms of affordance more generally. First, it illustrates the fluid and varying nature of affordances. Not all *requests* (or *demands*, *refusals*, and so on) are created equal. The mechanisms are artificial nodes and have room for within-category variation. The police tape veers closer to a *demand*, and the twine rope exerts very little force. Second, the elements that locate a technological object in one category versus another (for example, *request* versus *demand*) are not purely material but take shape in relation to cultural meaning systems and institutional infrastructures. The police tape is no less physically permeable than the twine, yet it enacts spatial restriction more powerfully.

Demands

Requests are distinct from *demands* in the relative availability of alternate options. A request prefers some line of action, but a demand implies there are no other possibilities. Demands exert a strong degree of force. Rather than asking someone to “Please do this, and please do not do that,” a demand more firmly states, “You will do this, and you will not do that.” A demand might present in the form of physical, social, and/or symbolic prompts.

Returning to fences, ropes represent a request, but steel fitted with electricity represents a demand. An electric fence demands that passers-by remain on one side of the barrier. When navigating space in a prison yard, for example, the fencing structures demand that inmates remain within a clearly defined and bounded space and that members of the public remain outside of that clearly defined and bounded space.

Like fences that organize how people move in space, so too to do roads and rail lines. Highways and train tracks demand that automobiles follow the paths on which the roads and rails were built. We might say that railways generate a stronger demand and roadways lean closer to a request. Not following a train track renders a train dysfunctional, thus making the locomotive technology dependent on the infrastructural technology. Cars remain functional when going “off road,” but drivers may suffer vehicular damage, bodily harm, and police sanctions (such as tickets and fines) between points A and B.

In the world of academia, significant attention has been aimed at the distribution (and control) of academic texts. Although digitization creates the opportunity to archive intellectual materials and make them publicly available, many mainstream publishing companies set up infrastructures in which articles are locked behind paywalls. Publishing platforms are then built in a way that *demands* either individual payment or institutional affiliation to access published content. This demand has been the subject of public protest as proponents of open access advocate instead for policies and related digital architectures that do not place financial restrictions on interested publics but instead allow knowledge to flow openly and equitably.⁷

On Facebook, the platform continues to *demand* that users select a gender category when signing up for the service. Initially,

Facebook demanded that users select either male or female but has since expanded to include more than fifty custom gender options. That is, Facebook dropped its previous demand that users engage in binary identification but maintains the demand for gender identification of some sort. Facebook also demands that users select from a prefigured list rather than use a write-in box that might broaden the field of self-identification.⁸ Platform usage thus requires users to gender identify, but the interface could be (and has been) reconfigured in ways to tighten or loosen those requirements. Facebook's gender-identity demand is a function of its design, and its design is a function of decisions that were neither natural nor inevitable and could certainly be otherwise.

Although *demands* exert force, they are not deterministic. People may opt out of using a technology or may subvert a demand in their use of the technology (though subversion requires significant effort and perhaps a degree of courage and risk). For instance, a person may covertly take a car off road; people may elect not to sign up for Facebook or they may try to confuse the Facebook system by selecting one gender category initially and then signaling alternate gender categories through other fields on the platform; and academics can undercut publisher paywalls through social sites like ResearchGate. Demands thus present as the only possible option but remain vulnerable to unexpected and creative user agencies.

In sum, *requests* prefer, and *demands* insist. Request and demand are not static or uniform categories but represent approximations of the intensity with which a technology pushes users in some directions and pulls them away from others. Within each category, there is room for variation and slippage. A strong request may spill over into a demand, and a weak

demand may arguably align with a strong request (that is, other options may seem plausible but unlikely). Together, requests and demands represent the bids technological objects place on users. Although these bids derive from objects, we should be sure to recall that objects are materialized action⁹ and thus are inseparable from the sociocultural systems from which they arise and in which they are deployed.

Encourage, Discourage, and Refuse

Encourage, discourage, and refuse are how technological objects respond when user-subjects initiate some action. These technological responses can accommodate, deter, or block users' initiatives. When technologies *encourage*, they make some line of action readily available and easy to execute. When technologies *discourage*, they erect barriers to a line of action. The action may still be available but not readily so. The user may have to overcome obstacles or creatively engage the technology in order to access lines of action that are *discouraged*. Technological objects *refuse* when some line of action seems entirely untenable.

Like the first set of mechanisms (*request* and *demand*), these three mechanisms are integrated as part of sociotechnical systems involving humans, material apparatuses, culture, and structure. Bids by the object (*request* and *demand*) are not empirically distinct from bids on the object (*encourage*, *discourage*, and *refuse*). Rather, each serves as a set of analytic pegs that represent distinct foci on particular parts of the human-technology relation. For example, when a technology demands some line of action, it refuses others; when it requests that users engage in some behavior, that behavior is also encouraged.

Encourage

Technological objects *encourage* some line of action when that line of action is made easy and appealing. The action is generally obvious, expected, and seamless to execute. Those lines of action that are encouraged often represent the very things a technology was built to accomplish. Users need to employ little or no creativity, deviance, or subterfuge to engage the technology in encouraged ways. For example, cameras built into phones encourage documentation, and the front-facing camera feature encourages self-portraiture (selfies).

Along with *requests*, features that *encourage* offer the clearest depiction of designers' intentions—what designers aim for the object to do. In some cases, however, an object may *encourage* lines of action about which the designer gave little or no thought. That is, an object may be built to accomplish a specific task, and this intentionality is an obvious part of the user experience. Alternatively, the object may be built a certain way for one reason (such as aesthetics, efficiency, or cost-effectiveness) but harbor features that *encourage* seemingly unrelated user practices.

For example, sharing and engagement are *encouraged* through the Facebook architecture. Key features of Facebook—such as the immediate availability of “memories” and a visible one-click tool for sharing, a text box with one-click options for adding images, and automatic “tagging”—all combine to encourage users to generate content and connect with their networks. Adding content to Facebook is easy, seamless, and represents the intentions of Facebook, Inc. The more data users produce, the more valuable the platform is to advertisers who are willing to pay to create targeted ads and to data brokers willing to pay for users’ information. It is thus in Facebook, Inc.’s financial interests to encourage data sharing and prolonged engagement, and the features of the

social network site do just this. However, the business model of Facebook also, it turns out, encourages political influence. Granular and expansive data production coupled with microtargeted advertising and a hands-off moderation policy combine to create the conditions by which political operatives can construct and deliver compelling political messages to exactly those individuals most likely to be persuaded, regardless of these messages’ veracity. It is unlikely that Facebook meant for this outcome, yet its product encourages the outcome nonetheless.

Dinner plates offer a less politically charged example of encouragement outside of intention. Large plates *encourage* greater food consumption, and small plates encourage portion control. Those who design and distribute dishware need not have a particular interest in consumption habits, yet plate size *encourages* and *discourages* consumption in meaningful ways. This bears out empirically, with research demonstrating that diners who eat from small plates feel more satisfied with less food than diners eating from larger plates, who require more food to feel sated.¹⁰

In most cases, dish design is a function of aesthetic style and normative cultural convention rather than concern about consumers’ dietary practices. For instance, fine dining establishments may select large plates to enhance presentation rather than to serve large meals, and small plates may derive from normative conventions of tea settings as part of a cultural food practice rather than a portion-control strategy. However, despite designers’ indifference to diet, plate size nonetheless *encourages* more or less food consumption.

This is not to say that plate proportions, as a feature, cannot contain volume-related intentions. For example, there is an emergent market of dishware designed specifically for dietary

practice. Capitalizing on the affordances of plate shape and size, companies have created food-management plating that controls portions and also *encourages* balanced food consumption. For example, the Portions Master Skinny Plate offers presized cut-outs for protein, starch, and vegetables. As described on the Portions Master website:

The Portions Master is a portion control plate that was specifically designed to help you eat healthy and lose weight, without having to count calories. With Portions Master, you just portion out your protein, complex carbohydrates, and fiber in the appropriate space, remove Portions Master from your dinner plate, and you're ready. It's really that easy!¹¹

If a person wishes to eat more healthfully, the Skinny Plate accommodates. If a person wants to indulge, a larger plate without cut-out portions would pose the fewest barriers and *encourage* unrestricted consumption.

In short, technological objects *encourage* particular lines of action by making them easy and accessible. Should users wish to engage those lines of action, the object readily abides. In some cases, like Facebook's encouragement to share and Portions Master's encouragement to eat a balanced diet, the design reflects a clear set of intentions by which design collaborates with the user to coalesce in a predictable and intended outcome. However, sometimes objects encourage behaviors that may not coincide with designers' intentions. Such latent effects can encourage lines of action that generate surprising and unexpected results.

Discourage

Objects *discourage* when their architectures and normative structures erect obstacles. Whatever is discouraged is nonobvious and requires a degree of extra effort on the part of users. The action

is available and plausible, but getting to it is not seamless. Users may need to employ creativity and technical savvy and be willing and able to circumvent norms and rules. Actions that an object discourages may be intentional or unintentional on the part of designers. Features might have been built to avoid a particular line of action, or certain functionalities might never have been considered in the design process and thus never incorporated into an apparatus.

Twitter's *discouragement* of long-form content, for example, erects obstacles by design. The Twitter platform makes space in each tweet for a specific number of characters (originally 140 and expanded to 280 in 2017), but there are ways for users to get around these character limits. For instance, users can take a screenshot of a long snippet of text and attach an image of the screenshot to a tweet. Users also can engage the platform's thread function to create a "tweetstorm"—a connected series of posts that generates a narrative. Despite these workarounds, users are tied to text limits by default and must undertake additional steps to practice verbosity.

On Instagram, users are *discouraged* from posting frequently. This *discouragement* is not a function of any design feature but reflects the norms of platform participants. While conducting interviews for one of my own previous studies, a participant recounted a story in which her younger sister was appalled to learn that the participant had posted twice within a few hours. The younger sister explained that there was a firm one-post-per-day rule and that anything beyond this was "clogging the feed."¹² The design features of Instagram do nothing to limit documentation and sharing (in fact, we might argue that the platform design *requests* and *encourages* content production and distribution), but the community informally censures those

who share too much, thus discouraging abundance and enforcing relative scarcity.

Combining community norms with design features, platforms and forums that curate through voting ostensibly *discourage* dissenting voices. Designers likely implement voting features to foster democratic participation. In practice, however, voting amplifies voices from the center while minimizing or erasing voices from the margins. Those who engage in ways that resonate with the majority of the community will receive positive feedback ("upvotes") and be rewarded with increased opportunities for attention. Those who engage in ways that challenge the community will receive negative feedback ("downvotes") or be ignored.¹³

For example, the image-sharing site Imgur sorts content by "up" and "down" votes from within the community. Images and comments with the most "upvotes" are located at the top of each page, and those that receive enough "upvotes" appear on the "front page," optimizing visibility. In contrast, "downvoted" content gets pushed to the bottom of the page, and when votes go negative (receive more negative than positive votes), the content disappears from the main site. After content disappears due to a negative vote score, it remains accessible only behind a "bad comments" link. In practice, this means that users who express alternative opinions are given less space on the platform than those who express popular views, thus reinforcing the ideological status quo among community members.

In a study of engagement around racial imagery on the Imgur platform, sociologist Christopher M. Julien found that the general zeitgeist on Imgur is one of colorblindness and "postracial" humor.¹⁴ Julien's study showed that forum participants downvote both explicit racism and progressive antiracist discourse.

Imgur's user base, which is predominately white, male, and middle class, effectively perpetuates a comfortable racial ideology and discursive practice that both rejects extreme white supremacy and also dismisses those who point out continued patterns of racial oppression. The vote feature thus *discourages* dissenting voices, empowering the community to remain ideologically unchallenged. Moreover, if we assume that dissenting voices are more likely to come from users who do not share the white, male, middle-class demographic, Imgur's vote feature also discourages participation by diverse and marginalized groups.

To be sure, dissent is possible on Imgur (and other vote-curated platforms like Reddit and the late YikYak), and there are no direct technical forms of racial or gender exclusion from participation. We may therefore imagine marginalized groups converging to generate a critical mass that changes the conversation through organized voting campaigns. However, this rebellious option is effortful and deliberate. By default, vote-curated platforms reinforce like-minded thinking and perpetuate the status quo. Dissent is not precluded, but it is socially and technologically *discouraged*.

Refuse

A line of action is *refused* when it is implausible and/or impossible. A technological object may be designed in a way that renders certain functions untenable. That is, it may be obvious from the design that particular functionality is prohibited. For instance, a traditional cell phone refuses internet access, and users probably would never consider using a classic Nokia to browse the web. Alternatively, Objects may present the possibility of functionality but then refuse when a user attempts to enact the function. For example, someone might attempt to

touch a computer screen to manipulate the display, but if the display screen cannot serve as an input device, then the content will remain undisturbed.

Sometimes, objects *refuse* as a feature of design, as when an action is intentionally and explicitly prohibited. Other times, refusals are incidental, as when a feature is unreflexively omitted during construction. For example, paywalls on digital academic journal articles (discussed previously) refuse access to those who do not pay or do not carry the proper institutional affiliation. Paywalls are built with the intention of controlling access and are a feature of the publisher's business model. In contrast, some publishers do not include direct hyperlinks between citations on a reference page and the sources referenced therein. By omitting hyperlinks, those who designed the interface prevent readers from finding referenced texts, but this was likely not an explicit consideration.

Previously, I used the example of Twitter *discouraging* long-form narratives by limiting character counts. Here, we may say that Twitter *refuses* to accommodate more than 280 characters in a single communication. This refusal is a feature of the interface design. When a user exceeds the designated character limit, the excess text turns red, as does the "remaining characters" indicator at the bottom of the tweet. The "remaining characters" indicator also displays negative numbers, showing users how many words beyond the designated boundary they have typed. The Post button fades to pale blue and becomes inactive, thus refusing a communication that is over the limit. In this way, Twitter refuses more than 280 characters per tweet, thus *requesting* brevity.

A key feature that distinguishes Facebook from its predecessor MySpace is that the latter *encourages* page personalization while

the former *refuses* personalization. Facebook users can provide content exclusively within prefigured categories set by the platform. The platform refuses to add music or background designs to a user's profile. The prefigured categories are arranged in a set order and displayed in a uniform way for all users. Facebook also refuses to let users publicly rank order their friends, a feature integral to the MySpace architecture.

Recalling Robert Moses's bridges in New York City, we can say that low overhangs *refused* to let public transport buses through. Moses's urban planning design did not refuse access to economically disadvantaged people but *discouraged* access by restricting forms of transit on which less wealthy New Yorkers were more likely to rely. Scholars have debated about Moses's racist or classist intentions when designing the bridges,¹⁵ but intentional or not, the bridges continue to organize movements of people, cars, real estate, and money along lines of race and class.

Objects *refuse* by excluding and prohibiting specific acts. These may be integral to the design or unreflexive products of omission. Indeed, the emergence of new features often transform an object that once refused into one that *encourages* (or vice versa). For instance, early cell phones were not fitted with cameras, thus refusing pictorial documentation. Newer models, however, have cameras and applications for photo storage and sharing, encouraging users to snap pictures and to do so in a social manner.¹⁶

It again bears reminding that *refuse* (like *demand*) is not a deterministic category. Refusals are not necessarily universal, nor are they always permanent. They present as impossible but remain subject to change and circumvention. Twitter previously refused more than 140 characters but now enables up to 280.

Facebook users may populate their photo streams with a particular aesthetic to approximate background personalization, even though “wallpapers” as such are refused by the platform.

In sum, objects *encourage* by making some lines of action obvious and easy, *discourage* by making some lines of action difficult to access, and *refuse* by rendering some lines of action impossible or implausible. These categories are not fixed nor are they mutually exclusive. For instance, leaving a tip is gently encouraged by the presence of a tip jar on a countertop but more explicitly encouraged by including a preset tip option as part of the card payment process. Shoppers are subtly discouraged from printing a receipt when an electronic self-checkout prompts the customer to make a decision (by asking, “Would you like to print a receipt?”), more strongly discouraged when the default response is no (leaving the shopper to switch the selection to yes), and even further discouraged—and potentially refused—if a receipt materializes only after the shopper asks for a copy from a human cashier.

Allow

Technologies place bids on users in the form of *requests* and *demands*. Technologies respond to users in the form of *encouragement*, *discouragement*, and *refusal*. *Allow* applies to bids placed by technologies and to bids placed on technologies. *Allow* is distinct from other mechanisms of affordance due to its neutral intensity and multidirectional application. A user may take a line of action, but there is no pressure to do so, and there are no significant obstacles in the way. *Allow* is like a fork in the road. A traveler may just as easily opt for one route as another. The traveler is not faced with enticements from any direction, and

the traveler does not need to overcome any extra blockades to access the pathways.

For example, multispeed blenders and multilevel light dimmers *allow* people to select variants of power and brightness levels at their own discretion. The blender does not try to persuade the cook to pulverize rather than fold, and it obliges equally when the cook pulses and continuously churns. The light dimmer does not resist the slightest glimmer or the most brilliant glow but allows light dispersion as the user deems fit.

Although Twitter, Instagram, and Snapchat *request* that users share content and *encourage* users to connect with others on the platforms, all of these platforms *allow* users to select any username handle that they wish. This naming policy is distinct from Facebook’s, which, through the company’s terms of service, has always *demanded* that users display their “real” names. However, after much controversy and debate, Facebook now allows users to select a “real” name from their name assigned at birth or another name by which friends and family would recognize them.

Just because *allow* is neutral in tone does not mean it is apolitical. For instance, the Facebook name policy has been mired in political contention, with opponents pointing to privacy concerns, especially among marginalized populations who might find harm in identity exposure. The allowed detachment between user identities and handles on Twitter, Instagram, and Snapchat thus accounts for issues of privacy and attends to a range of user vulnerabilities in ways that the Facebook platform neglects. Allowing open user handles is therefore a political decision.

Sometimes, features that maintain indifference by design are deeply political in ways entirely unforeseen and unintended by

designers. Remember, when left unchecked, technologies will arc toward power and privilege. This point became clear in the exposure of ostensibly neutral advertising interfaces of major digital media platforms during racial unrest in the United States in 2016 and 2017. As of this writing, the advertising interfaces for leading digital media platforms *allow* customers to utilize granular data to target any group of interest. After the appearance of a disturbing amount of white supremacist propaganda during the 2016 US presidential campaigns, journalists at ProPublica entered the Facebook ad interface to investigate the capacity to target users with white nationalist leanings. The publication identified 2,300 users who had expressed interest in "Jew hater," "how to burn Jews," and "history of 'why Jews ruin the world.'" With a quick fifteen-minute approval process, ProPublica was able to "promote" content to these anti-Semitic targets.¹⁷ Journalists at BuzzFeed similarly tested how Google's ad interface handled racist inputs. The BuzzFeed team typed the keywords "white people ruin," and the ad platform suggested running advertisements next to searches for "black people ruin neighborhoods." With the keywords "why do Jews ruin everything," Google suggested ads tied to searches for "evil Jews" and "Jewish control of banks."¹⁸ Similar issues were found in the ad interfaces of Twitter and Instagram. In short, building algorithms that *allow* targeting from any direction and with any agenda is a political decision because it forgoes an alternate option that *refuses* racism and expressions of hate.

Although Facebook, Google, Instagram, and Twitter all prohibit racism and bigotry in their terms of service, the designs of their platforms do little to uphold these rules. Their algorithms are built to extract data with optimal granularity and to churn that data into information for paying customers. These

companies project values of inclusion and equality, but their platform architectures do not have these values encoded. Thus, *allow* is neutral in intensity but can maintain strong political leanings, connected to or separate from, designer intent.

Chapter Summary

Despite Gibson's and Norman's articulations of affordances as gradated and nuanced, applications of the concept have been persistently static and binary. The struggle to incorporate gradation stems from a flawed analytic starting point. As long as analysts begin by asking, "What do these objects afford?," they will remain stuck in imprecise formulations by which an affordance is either present or absent. Altering the question to "How do these objects afford?" creates space for dynamism.

Asking *how* instead of *what* lays the groundwork for developing a framework and vocabulary that captures the continuous nature of technological affordances. Beginning with *how*, I suggest that affordances are characterized by a suite of mechanisms: *request*, *demand*, *encourage*, *discourage*, *refuse*, and *allow*. These mechanisms operate together as a tool to discern and articulate the varying degrees of insistence with which technological objects push, pull, and respond in multiple directions.

Rather than a rigid framework, the mechanisms are porous, rendering the analytic tool malleable by design. Each mechanism is an artificial stopping point rather than a firm designation, and within each mechanism, there remains room for variation. *Demands* may be strong or weak, resisting or seeping into the borders of *requests*. It may be unclear whether an artifact *refuses* some action or just firmly *discourages* it. A feature may sit ambiguously between *encourage* and *allow*. Indeed, one might

say that as a tool, the mechanisms and conditions framework encourages and requests disagreement and debate in affordance analyses.

The implications of the mechanisms of affordance can be individual, interpersonal, and/or cultural-structural. As features push and pull with varying degrees of insistence, these features guide what people do, how they interact, and how macro-level patterns are formed, altered, and reified. For instance, swipe-based dating apps *request* that users consider a high volume of potential partners and *discourage* users from slow considerations. The swipe feature may then shape how individuals evaluate potential partners and how they present themselves as romantically appealing—placing emphasis on quickly identifiable markers such as physical attractiveness and income. The glut of potential partners and ease of selection and dismissal may shape how those who use the apps interact during dates, perhaps moving quickly to intimacy to establish commitment within a crowded pool or keeping distance to avoid foreclosing the full range of romantic options. These micro interactions can affect romance and intimacy at a cultural-structural level by normalizing serial dating, detaching a single date from future romantic engagements, and empowering those who feel dissatisfied in current relationships to explore the abundant field. In short, swipe apps don't just offer another way to date but reshape the meaning and practice of finding love.

The mechanisms of affordance hold social, political, economic, and legal ramifications, with far-reaching effects. Higdon's HB37 in Missouri, for example, was about more than just controlling space or enforcing safety. The timing of the bill coincided with US protests about racist policing practices, including violence by police officers against black citizens. Some of the

most tumultuous protests took place in Ferguson, Missouri—the state in which HB37 was introduced. Attempts to criminalize police barrier breaches can therefore be read as a political move that restricts protest activities and shifts power to state authorities. HB37 would not only strengthen the *request* that citizens remain outside of police perimeters but also *discourage* aggressive protest tactics and *encourage* police use of force.

In sum, the mechanisms of affordance address the binary problem that has heretofore plagued affordance theory. Asking *how* instead of *what* gives nuance and agility to affordance analysis, freeing it from rigid binary constrictions. However, the mechanisms alone are not enough. On their own, the mechanisms of affordance depict complex objects in relation with homogeneous subjects. But affordances will vary across users and contexts. Thus, we must ask not only *how* objects afford but also *for whom and under what circumstances?*. This question—*for whom and under what circumstances?*—is the focus of the next chapter.