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DISAFFORDANCES AND DYSAFFORDANCES IN CODE

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Code, understood in this paper in the broad sense of ‘architecture’ (Lessig, 2006), implicitly contains an idea of its user through its interfaces and affordances. Code may hold a prejudicially normative idea of its users, excluding some persons in a way which rises to the level of discrimination—as Winner (1980) influentially argued, using the compelling example of Robert Moses’s choice to design some overpasses in New York City low enough to prevent public transportation buses from routes which would have allowed the poor to use beaches which Moses wanted to reserve for the more economically privileged. In Winner’s analysis, however, while the discriminatory effect is attributed to the technology—he argues that ‘artifacts have politics’—the attributes of the technologies leading to discriminatory effects are not analyzed in terms of their non-affordances.

This analysis is needed in order to distinguish (a.i) unavoidable exclusionary design and (a.ii) unproblematic exclusionary design from (b) problematic exclusionary (discriminatory) design. To illustrate the first case: (a.i) it certainly does not seem discriminatory to design clothing for female gender-normative self-presentation, even though doing so does actually exclude the majority of uses by the majority of male users, since exclusionary design in this case merely reflects a mutually exclusive construction of proper functions (Millikan, 1987). Similarly, in the second case, (a.ii) designing for a certain range of dress sizes, while not unavoidable due to the context of use as in the previous case, seems unproblematic so long as the designer’s choice is not part of a systemic structure of exclusion—so long as other designers produce “enough and as good,” as the Lockean proviso (Locke, 1988) has it. This is very different from a case wherein design is (b.i) directly exclusionary of relevant users, as in the case of a job application required to be submitted through software which does not accommodate screen readers for the visually impaired, or (b.ii) indirectly exclusionary through the recapitulation of existing prejudices or the global failure to produce enough and as good among service providers, as in non-optional gender and sexuality binarism

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in social network or dating site profiles, or the famous and emblematic case of the (white) “flesh-colored” crayon and adhesive bandage.

This paper puts forth a theory of non-affordances which allows for distinguishing unproblematic exclusionary code from problematic and discriminatory code, which is described as either discriminatory through disaffordances or through dysaffordances. The term “disaffordance” has been used previously in the theory of affordances (Gee, 2007, 2008; Gibson, 2014; Marcus, 2015), but only very infrequently, without a robust definition, and not in connection to issues of justice. The term “dysaffordance” is proposed here for the first time to my knowledge.

Disaffordances and dysaffordances are illustrated with a series of technologies conceptualized under divisions taken from Ihde’s human-technics relations (1990) and with reference to Latour (1992, 1999). Examples include calendars, résumés, stairs, strollers, kitchen counters, hand-tools, user profile data entry fields, predictive algorithms in search and advertising, virtual reality imaging methods, game play structures, and air conditioning. Through discussion of these examples, disaffordances are defined as technologies that fail to recognize differential embodied experiences that correspond to attributes constitutive of group and individual identities including race, gender, disability, and religion. Examples of disaffordances include failures to program for access by disabled persons, and organization of calendars in ways which require those practicing non-Christian faiths to both reveal potentially sensitive personal information and to suffer loss in opportunities for career advancement in order to maintain their perceived religious duties.

Dysaffordances, by contrast, are defined as not only *failing to recognize* identity-related differences (as in disaffordances) but as actively *forcing* non-normative-conforming users to *misidentify* themselves in order to gain material or social access to the commodities and services provided through these technologies. Examples of dysaffordance include real-name policies which require users to self-identify in ways constrained by governmental regulations which may not conform to social identities, gender and sexuality data entry binarisms, and game character attributes which force female players to either play as male characters or adopt the feminized game-play to which female characters are often relegated, acting in supporting roles (e.g. healers, archers) to masculinized or male-gendered lead player-characters.

The theorization of dis- and dysaffordances provides three distinct benefits over leaving non-affordances as an untheorized mere lack of affordance. First, this theorization allows for the identification of thresholds where non-affordances become issues of ethics and justice, allowing for stronger, clearer arguments about the need to reform discriminatory code. Second, the identification of this threshold allows us to see how dis- and especially dysaffordances not only participate in but sustain and actively construct exclusionary normativity (e.g. white normativity, male normativity, heteronormativity, bi-erasure, ableism, etc.), showing that code is not merely a cultural carrier but plays an active role in the social construction of deviance. Third, the identification of this threshold allows designers to better identify issues in code during its initial formulation.

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