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PhD Thesis Summary

Technologies can *be* and *do* many things. This fork in my hand may be for eating, or it may become a weapon. A stethoscope may be used by a doctor to support diagnosis, or it may be the tool of choice for a criminal cracking a safe. This toilet may be for urinating, or it may become art. Words and ideas, as technologies, can be appropriated too: the term *bitch* may be wielded as an insult, or it may be re/claimed by feminists; the notion of difference may help to honour diverse perspectives and practices as they come to matter, or it may serve to essentialize identities and reinforce boundaries between individual and collective bodies. When technologies (objects, concepts, practices, theories) transit between disciplinary cultures, the value systems integral to their design and use become subject to interrogation and innovation.

At the heart of this thesis is the notion of *critical appropriation*: that is, the intentional re/contextualization of technologies as an opportunity to examine the effects of differences that have come to matter within and between communities of practice over time. As a theoretical framing, critical appropriation is related to the re/claiming of technologies (metaphors, symbols, methods, metrics) without assuming said technologies have an originary or singular source. Critical appropriation is a sustained process of taking and making—not the taking of pre-constituted things—but *taking as making* through the ongoing differentiation between this and that, for me and you.

The heart—as object, symbol, and process—circulates throughout this thesis, re/imagined in the material-discursive traditions of medicine, art, and philosophy from antiquity to present-day. The plurality of the thing-we-call-the-heart, and likewise, the thing-we-call-the-body, is foregrounded to trouble the notion of interaction between *a priori* things. Drawing on feminist, new materialist, and process philosophies this thesis emphasizes the continual enactment of boundaries between things-that-interact as integral to their intelligibility, as well as to understandings of the relationships that emerge. The notion of interaction is re/cast as an effect of ongoing processes of *intra-action* and *diffraction* (à la Barad), through which distinct things—e.g. bodies, technologies, and boundaries—come to matter. The question of how things come to matter, relationally, is pertinent to practices of design in myriad disciplines, including but not limited to human-computer interaction, computer science, medicine, music composition, and my own domain of choreography.

The choreography of this thesis invites transversal readings: although chapters build one upon the next, seemingly self-contained, they are also designed to spill into each other via the re/turning of ideas and images throughout. The text progress as follows: Chapters 1 and 2 address the performativity of the structure, and key themes such as critical difference, appropriation, and diffraction in interaction design; Chapters 3 and 4 discuss the ontological plurality of the heart and body, challenging notions of causality and representation in performance; Chapter 5 concerns the appropriation of biosensors from the field of medicine into music, observing shifting motives and methods, as well as understandings of human bodies and movement over time; Chapter 6 narrows in on the notion of critical appropriation *as* artistic practice, providing examples from diverse fields, as well as in my own collaborative work as a choreographer; and finally, Chapter 7, co-authored with composer John MacCallum, proposes a re/thinking of interaction *intra-actively*, and collaboration *diffractively*, in order to cultivate cross-, inter-, and trans-disciplinary practices that not only accommodate difference, but which require the effects produced by critical difference to thrive.