

Is Engineering Philosophically Weak?

A Linguistic and Institutional Analysis

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A recent paper (Mitcham, 2008) argues that there are certain occupations¹ such as medicine and law that aspire to good-in-themselves values such as health and justice and calls these *philosophically strong*. Mitcham distinguishes these philosophically strong occupations from others such as engineering, the military, and business that lack such ideals and calls them *philosophically weak*. Moreover, after this descriptive start, Mitcham moves toward the normative and suggests that engineers as individuals and engineering as an occupation might benefit by aspiring more valiantly to good-in-themselves values.

The present paper takes Mitcham's terminology, key distinction, and subsequent ethical urgings as interesting and deserving of further scrutiny. The initial approach is linguistic. The paper takes the terms "philosophically weak" and "philosophically strong" at face value, looking for differences among the Mitcham 5 in so doing. An analysis of both individual practitioner and occupational awareness of the five core elements of philosophy—metaphysics, epistemology, ethics, politics & aesthetics—results in a division between philosophically strong and weak occupations, but along different lines than those of Mitcham's analysis. This analysis results in the conclusion that engineering is philosophically weak, but in a sense different from that of Mitcham.

Trying to recover Mitcham's distinction, the paper then explores the distinction of *end-in-themselves* and *instrumental* occupations. This distinction seems to capture the division at the level of the whole occupation, but at the level of individual practitioners, even this analysis has difficulties. The juxtaposition of occupational and individual disparity is a clue that perhaps *institutional* (North, 1993) difficulties must be probed to obtain an alternative formulation.

The paper continues by examining the institutional arrangements in which the various occupations practice and finds them to be substantially different among the Mitcham 5, with institutional similarities aligning along the boundaries of Mitcham's distinction. This insight gives a second interesting clue to an alternative model of what may be separating Mitcham's strong and weak occupations.

¹ Mitcham uses the term "profession," but we use the weaker term "occupation" to avoid any debate over whether the five may all be considered professions in some conventional sense.

In particular, Mitcham's strong occupations are often set in institutional arrangements where two conditions combine: (1) the practitioner is assumed to promote the client's interest and (2) working for the client is presumed to result in a larger societal good through the workings of the larger institutional setting and constraints placed on the occupation by that setting. The paper calls the first condition *local ethical alignment* and the second the *presumption of global ethical alignment*. The institutions of law and medicine are examined in this light, and, while they differ in the way they satisfy condition (2), they both satisfy conditions (1) and (2). The paper calls such occupations *ethically simple*, because doing good as a practitioner usually only requires practicing one's art well in harmony with one's client's interests.

By contrast, Mitcham's "weak" occupations share the characteristic that following the "client's" wishes is little guarantee of a good global outcome. This can occur because (1) the client may seek an outcome that is malevolent or otherwise not aligned with a larger interest, and (2) even if the client's goals are aligned the outcomes are uncertain or unpredictable in important ways and locally aligned action may result in some unintended consequence that is judged as unsatisfactory after the fact. Even if we ignore the social difficulty of summoning the courage to reject performance in cases such as case (1), case (2) suggests that the "weak" professions share the characteristic that local alignment is no guarantee of global alignment. In this way, what Mitcham calls "weak" might be better termed *ethically complex*, and this suggests that simple urgings to loftier ideals might have a rough go of it for reasons that are difficult to lay at the individual practitioner's door step.

The paper concludes by considering the interrelation of institutional complexity and ethical complexity using examples drawn from engineering history. Layton's study of the development of engineering professional societies in the 19th and early 20th century (Layton, 1971) is particularly useful. This past is also used to reflect on growing calls for professionalism in the reform of engineering education (Sheppard, et al., 2008). Although the lessons are difficult to draw, it does seem clear that overly simplistic, universal approaches to the design of transformation efforts are likely to be counterproductive or, at least, incomplete and not broadly applicable.

References

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