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On Making and Failing

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Abstract
Making is ubiquitous. We all make things. Or maybe we don’t. But we could. The equipment is there, the tools and the skills can be learned. The expertise and the spaces shared. However, despite popularly stated, not everyone is a maker. Who gets to participate in making and what sites and voices are excluded? This short paper provokes questions on the interest in making, the continuous notion of empowerment and demands to #failharder.

Author Keywords
Making; manufacturing; failing; maker movement.

ACM Classification Keywords
H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

Introduction
Current interest in making is threefold: there is academia, there is industry and there is society, the latter consequently includes both one and two on their own terms. While the topic has spurred discussion and excitement in academia, where making and maker culture has “emerged as a substantial genre” by itself and most writings from the earlier maker discourse were “described in an overwhelmingly celebratory tone” [12], recent writings have taken a more critical stance towards sustainability [12], including cultural and societal dimensions [4, 11] and the changed roles of
involved actors and the driving forces of the movement [1, 6]. The discussion in HCI research has in the last decade developed reason around maker culture, where technology is produced away from the traditional manufacturing plants and research labs, hence focusing on makers, hackers, tinkers, kick-starters and start-ups and by highlighting their way to reinvent things, tools and processes instead [1, 5, 14]. Similarly, industry is interested in making for related reasons: the maker movement is suggested as solution for stagnating growth, giving pulse for innovation, spurring the democratization of manufacturing [16] as well as that the movement itself provides a new market sector, where industry can target makers and hands-on designers and developers. Tanenbaum et al. argue that the rise of the maker movement “owes much of its success to the excesses of current industrial economies, processes, and breakthroughs in batch fabrication technologies” [13]. They accordingly emphasize that “our current economy thrives on regular obsolescence, generating a surplus of “disposable high-technology” that greatly lowers the costs of hacking and experimentation” [13]. On the one hand this surplus provides access, affordability and availability of a vast amount of materials and tools, but on the other hand it capitalizes on this normalized standard of producing obsolete amounts of products. Question is: How can we tackle this dichotomy?

Then at last, society is impacted by and has an interest of the promises of the maker movement. On an individual level, there is an understanding that making has empowering qualities. According to Bardzell, Bardzell and Toombs “empowerment” as it can be understood in connection to making is “a state of being, in which the subject feels enabled to activate their knowledge, manual skill, and/or materially productive engagement” [3]. On a broader societal level, the maker movement has proliferated and diversified itself in different settings, and reaches out towards education, public museums and libraries or even to resolve conflict [8]. As it becomes salient, the maker movement has gained traction and application areas in diverse fields.

**Promise and Demands**

While using this threefold to map out and show where current and historic interest in making is located, the related reports and writings come in different forms. The four reports [2, 8, 9, 15] demonstrate the demand both industry and society expects from the maker movement from various contexts such as economic growth through innovation [9], for (engineering) educational purposes [2], towards collaboration between two (grass root) movements [15] and according the cultural role of makerspaces [8]. Hence the demand for the maker movement is manifold. Instead on being limited on the general *desire to understand how things practically work and advocate changing things for the better* - making as such is appropriated by multiple stakeholders, with interests and demands of their own.

This is not a critic, it is simply questioning if making has the possibility to - make communities, create a safer world, built systems, fix education, changing markets and still make meaning in line with its original account? Isn’t this in the end too much to ask? Lindtner, Bardzell and Bardzell critique this form of “technosolutionism, i.e. the idea that technology provides solutions to complex societal problems” [10],
and argue that this underlies making. They say and that we instead should try to understand “the sociopolitical, legal, national, urban, and ideological contexts in which technologies are deployed” [10]. Their framework opens for a more reflective discourse on the maker movement. But let us move to a small case now, to see how certain demands play out in a practical example.

**Fail harder**

Makerspaces are steered, maintained and populated by people, who are interested to engage with digital and physical materials, which they e.g. work or play with, rebuild, take apart, fix, invent, test. The maker has often been defined as “someone who derives identity and meaning from the act of creating” [7]. On a similar account, while manufacturing and working with hardware has become easier, Williams and Nadeau point out that “does not make it, in any absolute sense, easy” [16].

My observations show, that most people who are active at the makerspace have some form of expert skill set and are amateurs in other areas. While Participant A knows everything about heavy machinery, motors and vehicles, Participant B is proficient in software but can’t solder, a third Participant C has knowledge with wooden tools and the sewing machine, but has no idea about 3D printers. While this has been pointed out as an advantage, as providing the possibilities to teach skills to another and in this way, disseminate knowledge – observation shows that it also creates territories which excludes makers from within as well as outsiders who are curious to enter. However, these notions of territory keeping and exclusivity contradict the otherwise prevalent rhetoric of openness [1].

To tackle this observed behavior and strive for a more including attitude within the makerspaces in question, a group of makers identified this problem as the most urgent. During a workshop at the National Makers Conference in Malmö, Sweden in October 2016 they created a short film (fig.1), where they documented their daring of testing machines and tools in the local makerspace, they didn’t know anything about. The experience resulted in an installation (fig.2), presenting the different materials and tools, the documenting short film as well as a combining hashtag: #failharder. Nothing of the projects were functioning: they should showcase how you can risk to fail. And, that anyone can ask for help, that territories need to be softened and borders eliminated. This small example demonstrates, how problems and demands can be tested and challenged through observed practice. Astonishingly the Makers of China report recommends that the UK (and Europe), should promote their values of creative hubs - to fuel playful experimentation, share their social values as well as to see failure as a precursor to success [15]. Maybe we should all fail harder in order to progress?

**Short Bio**

Sophie Landwehr Sydow is a PhD candidate in Information Society at the Department for Computer and System Sciences at Stockholm University. She is financed and based at Södertörn University at their CBEES graduate school. Her PhD research project focuses on the ‘Future of Making’. Previously Sophie has been a research- and management assistant at the Mobile Life VINN Excellence Centre, as well as obtaining different positions in the sectors of project management and communications. Her qualifications include a M.Sc. in Interactive Media Design and a BA in Media Management and Journalism.

By bringing a Nordic perspective to the table, Sophie focuses on the specific sites of the maker movement and its driving forces. She is currently interested in the different material and immaterial aspects of making, focuses on the experience of maker practice itself as well as on initiatives regarding female makers.
References