

## Individual Upcycling Practice: Exploring the Possible Determinants of Upcycling Based on Literatures in Craft, Do-It-Yourself, and the Maker Movement

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At the individual level, *upcycling* – the creation of forms from waste materials that attempt to be of a higher quality and of a more sustainable nature than the compositional elements from which they were derived (Barber & Hale, 2013) – has recently been actively advocated by some entrepreneurs, as part of waste management strategy and towards sustainable production, and by some individuals, as a lifestyle of reduction and towards sustainable consumption, in developed countries including the UK. Arguably there is also an increase in the overall number of practitioners aided by more readily available physical resources (e.g. Maker Faire, Hackspace, tools and materials, etc.) and digital resources (e.g. Instructables, forums and blogs, etc.) amongst others; nevertheless, the practice of upcycling is still marginal. Taking into account the potential of upcycling as a means towards waste prevention, and sustainable production & consumption, the most relevant question to ask at this point may be how to scale up this marginal practice into mainstream practice to make a bigger impact in society and environment. Despite the publication of a number of books and papers concerning the understanding of renaissance crafts, new ways of DIY (Do-It-Yourself), and the emerging maker movement, most address the issues in broad terms but do not focus on what drives and facilitates upcycling, which is the fundamental understanding for scaling up. Therefore, this paper reviews the most relevant literatures in craft, DIY, and the maker movement, identifying both internal factors (i.e. personal needs and motives) and external factors (i.e. situational contexts). The paper continues to provide a set of possible determinants of upcycling based on the framework of Triandis' theory of interpersonal behavior – selected due to the inclusive nature of the theory, reflecting both social psychology and social practice perspectives. The results of the literature review indicate that attitude, affect, and facilitating conditions are more frequently appearing as drivers and influencers rather than social factors or frequency of past behaviors. This implies that effective service design in Hackspace or other forms of grassroots workshops – which radically improves the beliefs/evaluation of the outcomes of and emotions about upcycling, and provides facilitating conditions for all ages and genders – may significantly lower the barriers for non-practitioners to become practitioners.