Perspectives of Craft in the Context of Design (Part 1)

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Preliminary Notes
This paper examines how current approaches in design studies can be applied to promote the contribution of craft in the context of a "design-driven" economy. Considering literature on the subject of craft and professional practice (Ax 1997, 2007, 2014; Crawford 2010, 2015; Neuweg 2001; Rumpf 2003; Schön, 2006; Sennett 2008, 2015) and drawing on ideas from teaching the courses "Craft in Action" (summer terms 2015 and 2016) and "The Politics of Craft" (winter term 2015/2016) at the "New Design University", St. Pölten, Austria, the paper proposes a critical framework for research and teaching. The following considerations are not the result of an empirical study. They are based on my experiences in teaching these courses. The intention is to develop a curriculum in the field of craft research. Conclusions from theories are summarised referring to the topics didactics, cooperation and sustainability. This knowledge can be used to demonstrate perspectives of craft in the context of design.

"Craft" is understood as a manufacturing process for small batches and custom-made items. Considering different steps in planning, e.g. problem formulation, definition of objectives, development of alternatives, forecasting and plan creation, the mode of hand-crafted manufacturing runs through various phases. Craftsmanship is characterised by unselfconscious processes (Alexander 1964, 46–54) and pragmatic design (Broadbent 1973, 25–29), influenced by heritage and socialisation. Practical and tacit knowledge (Neuweg 2001, 176, 359; Polanyi 1985, 53) is strongly linked with these practices. Dual education in companies and vocational schools, a hierarchical model of master, journeyman
and apprentice and a specific and individualised procedure characterise this way of manufacturing. Craft thinking (Yair 2009, n.p.) is associated with "manual competencies" (Crawford 2010, 112; 2015, 23), a certain attitude to work and aspects of consistency, ethics, quality, persistence and use value (Rumpf 2003, 23).

"Design" is understood as a process connected with mass production resulting from the division of labour. Considering different steps in planning, design takes place in the phases conceptualising, system development and development (Schill-Fendl 2004, 44). Industrial Design is characterised by self-conscious processes (Alexander 1964, 55–70) linked to academic education and explicit knowledge. In comparison to planning, which is a theoretical activity, design is considered to be a practical activity (Schill-Fendl 2004, 50). This notion of design describes the fluid creative process connected to ill-structured problems (Rittel & Webber 1972, 16). Design is associated with the professional field of creative entrepreneurs, its epistemology being regarded as "designerly ways of knowing" (Cross 2007a, 27; 2007b, 47).

Craft is essential for basic services in a society. It can therefore be considered as an anthropological constant (Ax 2007, 43). Historically speaking, the part of the population working in the field of craft amounted to approx. 15% (Ax & Hinterberger 2013, 45–46). Surviving feudalism, craft was transformed during the industrial revolution. Design benefited from craft being embodied in material culture and should therefore be considered as a kind of craft and not vice versa (Bean & Rosner 2012, 86–87). By supplementing handicraft work with design and adapting methods and theoretical approaches beyond the field, design research sometimes appears to be questionable for craftsmen due to the different conditions of work, e.g. batch production, short value chains, locality and customer contact. Comparing design and craft, there are different forms of knowledge transfer. (i) Craft benefits from design via e.g. CAD, design thinking, fablabs, open design and prototyping. (ii) Design benefits from craft via e.g. DIY (do-it-yourself), manual competencies and ecologies of attention. Significant changes of design and manual work seem to be the result of interactive value creation processes by co-design or co-consumption. Shared economy, prosuming, local exchange systems and community work proclaimed by the Craft or Maker Culture reinforce this trend. Fabbing redefines manual competencies of design in the field of art and craft (Gershenfeld 2005, 6). These conditions result in a more socially-oriented style of designerly work, personified by the "entredonneur" (Wood 1990, 9) for solving complex problems. Studies in social constructivism and the advance of STS programmes at universities offering craft and design courses are changing the concept of design processes by strongly emphasising social interaction. Delegation, networking, negotiation skill and the influence of non-human actors are becoming more important. What craftsmen or designers
are actually doing and how they are interacting in groups is investigated by ethnographic research. Originally based in technical sciences and arts, design research will more and more be incorporated into the social sciences. By Bruno Latour’s claim of "drawing things together" (Latour 1990, 6; 2009, 7) within the political utopia of "Dingpolitik" (Latour 2005, 22–23) and Albena Yaneva’s ethnographical research on designerly "controversities" (Yaneva & Liam 2012, 35; Yaneva 2013, 78) it seems that the concept of design processes is changing from a profession of technical problem solvers to a profession of social agents. This creative class of entrepreneurs produces social services and capital which can not be privately owned and can result in a new understanding of creativity (Gauntlett 2011, 220). Such changes raise questions on the pricing of social services and on the establishment of these forms of labour in university courses.

**Didactics**

Academic design education changes by including practical craftsmanship in university programmes. Bachelor and master study programmes such as "Craft + Material Studies", Bachelor of Fine Arts, The University of the Arts, Philadelphia (http://www.uarts.edu/about/contact-us [18.04.2016]), “Design Crafts”, De Montfort University, DMU, UK (http://www.dmu.ac.uk/study/courses/undergraduate-courses/design-crafts-ba-degree/design-crafts-ba-degree.aspx [18.04.2016]), "Design Crafts", Middlesex University, London, UK (http://www.mdx.ac.uk/courses/undergraduate/design-crafts [18.04.2016]), "Crafts", Staffordshire University, UK (http://www.staffs.ac.uk/course/SSTK-03127.jsp [25.06.2016]), "Craft", University of Brighton, UK (https://www.brighton.ac.uk/courses/study/craft-ma-pgdip.aspx [25.06.2016]), "Contemporary Design Crafts", Hereford College of Arts, UK (http://www.hca.ac.uk/Courses/University-Level/BA-(Hons)/Contemporary-Applied-Arts [25.06.2016]) and "Craft". University College of Arts, Crafts and Design, Stockholm, Sweden (https://www.konstfack.se/en/Education/ [25.06.2016]) emphasise material diversity, e.g. ceramics, gemstone, glass, metal, polymers, textiles, wood, as well as cross-disciplinary manufacturing. Craftsmanship is discussed as an element of social change. An important educational task is the acquisition of craft competence by tacit knowledge transfer (Neuweg 2001, 10). Manufacturing processes of products are rated higher than preliminary design of mock ups and prototypes. To disassemble and reconstruct things has a learning effect. Lecturers turn into experts available for students as a resource to learn about materials and processes (Dougherty 2012, 12f.). Against this background, teaching changes to a service and “omniscient” teachers turn into colleagues and co-investigators (Renno 2014, n.p.; Collins 1990, 5). Expertise, practice and socialisation in dual education offer certain specialist skills which can be regained by design didactics. Technical expertise as a result of lengthy learning processes linked to socialisation and time is a significant challenge.
A perspective of craft can be found here in the reclamation of the real by preserving a sense of inclusion which is the result of learning processes supporting individual attention and autonomy (Crawford 2015, 25).

Future roles of design can be located in information, interaction and service design. To a greater extent than today, goods will be perceived considering immaterial aspects (Manzini 2006, 156–157). Service features, communication between suppliers and customers and cooperation between employees are part of a hybrid and complex system design. Based on Latour (2004, 25; 2009, 7), Manzini (2015, 122) argues that the future role of designers can include translating matters of facts into matters of interests. Design activities are also linked to "immaterial" labour, e.g. affective, communicative and cooperative activities. Because of an excess supply of labour, curricula for design education change in the direction of education for managers and creative entrepreneurs (Ax 2007, 40). New activities in the design field emerge related to a growing service sector. Service design shifts into the area of small business where more and more people act as private entrepreneurs. In Germany and Austria, 90% of all companies are small or medium-sized enterprises with less than 10 employees (Ax & Hinterberger 2013, 337). Customer service and communication between producer and consumer are important issues.

Craft is strongly connected to personal services which often demand face to face communication of service providers and customers. Alan Blinder distinguishes between personal and impersonal services and analyses their features. The former are based on personal meetings for sharing work, e.g. a repair service, physiotherapy, activities of baby-minders, taxi drivers. The latter are characterised by the fact that work is not dependent on time and place, e.g. computer programming, call centre services, the work of scientists (Blinder 2007, 2–3). Outsourcing reduces the value of work. Offshoring infringes local development potentials (Ax & Hinterberger 2013, 264). The "Offshorability Index" for "Architectural Drafter" is 90 and for "Commercial and Industrial Designers" 85 (Blinder 2007, 38). Because our physical world limits outsourcing and offshoring, future potentials of personal services developed through craft increasingly emerge.

**Cooperation**

Cooperative tools or tools for conviviality as communicative tools enhance people’s involvement in society (Illich 1986, 31). Illich (1986, 45) criticises post-industrial society and technology as a production system. Cooperative tools that hand over more control to the people are paraphrased as error-friendly techniques by Christine Weizsäcker (Weizsäcker 2001, 77). She coins the term "Eigenarbeit" (individual work, [http://www.ecoropa.info/christine-von-weizsäcker](http://www.ecoropa.info/christine-von-weizsäcker)) [21.07.2016]) based on Illich’s
cooperative tools and critique of technology (Weizsäcker 2001, 75–76). Eigenarbeit consists of activities like housekeeping, subsistence, creative work. Not being paid but being indispensable is a central feature of this kind of work. Eigenarbeit is work as a communicative activity (Wendt 1982, 36). The concept dissolves the distinction between leisure, profession and housework and enables autonomy and a corporate feeling (Wendt 1982, 37; Thackara 2005, 116). Work for one’s own replaces goods by activities (Illich 1982, 42). The outcome is not only providing goods or services but also instigating processes of self-development by which people become aware of their own significance (Johannes Heimrath in conversation with Christine Ax and Jens Mittelsen Scheid: Ist die Mühe etwas wert?, https://vimeo.com/18783930, [5.05.2016]). Eigenarbeit can be seen as a foundation for social change. Craft is often associated with this kind of work. The exchange value of Eigenarbeit is not only a wage but the acquisition of expertise and a certain attitude. High wages are not expected because the reward lies in the work itself (Ax 2014, 222; Ax & Hinterberger 2013, 329). Within this context, Ax & Hinterberger (2013, 173) refer to the concept of "good work" as a key approach for a future economy. Craft promoting good work is a democratic vision (Christine Ax in conversation with Jens Mittelsen Scheid and Johannes Heimrath: Ist die Mühe etwas wert?, https://vimeo.com/18783930, [5.05.2016]).

Sennett (2008, 52–54, 75–76) treats craft metaphorically by describing the transformation of work. The notion of craft as cooperative activity (Townsend & Niedderer 2016, 5) consists of different types of exchange processes, e.g. altruistic exchange, win-win exchange, differentiating exchange, zero-sum exchange, winner-takes-it-all exchange (Sennett 2012, 105–122, 10). Globalisation leads to decentralisation and cross-industry exchange. Cooperation and networking characterise the craft sector (Ax 1994, 43–44; Zentralverband des Deutschen Handwerks 2010). Two different types of cooperation and knowledge transfer are possible in craft. (i) Fablabs or manufactories produce horizontal integration, e.g. interdisciplinary knowledge transfer on one level. Single production units are coupled, promoting an exchange of competencies and know-how. Stronger horizontal integration can be a characteristic feature of new manufactories resulting in a network of flexible specialisation (Ax & Bierter 2000, 3). (ii) By vertical integration cooperation between business-level, software system, production facility, machines and appliances is optimised.

**Sustainability**

Crafted products are often related to a certain form of material aesthetics. Goods affect us differently dependent on whether they are produced by hand or industrially (Christine Ax in conversation with Jens Mittelsen Scheid and Johannes Heimrath: Ist die Mühe etwas wert?, https://vimeo.com/18783930 [5.05.2016]). Idealisations in the consumer culture by the creation of brand names or imaginary use values frequently indicate that some people are
saturated with material wealth. As an alternative, aesthetic and ethic principles of sustainable design are discussed (Manzini 1995, 173–174). Craft, Slow Design, Slow Work or New Work contribute to the development of such a concept. The focus is on using regional products, saving resources and reducing transportation costs. A perspective of craft is the development of new types of consumption and appropriation beyond customisation. Consumers design and produce goods by themselves (Campbell 2005, 30–31; Anderson 2012, 58–59). Ideological appropriation on a symbolic level becomes a thing of the past. Because of deskilling consuming takes place as prosumption. Job satisfaction is to a greater extent a feature of work in private places than of work in work places. Deskilling of the middle class generates the same effect as industrialisation did with the working class. Creativity is more a matter of free time than of working time (Campbell 2005, 38). Handicraft work is often described as humane, creative and free labour as opposed to alienated industrial labour (Campbell 2005, 38). The concept addresses both physical manufacturing processes and the quality of subject-object relationships.

Craft is often associated with self-sufficiency, freedom, self-determination and empowerment. Romantic glorifications of craft fall short because they do not address self-exploitation due to low wages and monotonous work. In repair cafes, co-working spaces and DIY-workshops craft itself changes into a product. DIY approaches at university level were not able to establish themselves in the 1970’s and were a rather small alternative section (Ax 2007, 38). With increasing technical infrastructure, DIY has changed from a subsistence-based and industrially orientated type of production into a dynamic form of low cost manufacturing (Fox 2014, 27). Prosuming plays a central role. In 1980, Alvin Toffler described Do-it-Yourselfers as prosumers (Volkmann 2010, 209). This kind of activity comprises several types of involvement and value creation (Blutner 2010, 90–91). (i) Restrictive Co-Production. Consumers assemble prefabricated scripts, e.g. painting-by-numbers kits (Knott 2013, 51). (ii) Eigenarbeit. Consumers carry out an open script, e.g. Hacking Design (Abel 2011). (iii) Interactive co-production. Consumers are involved in design processes, e.g. thoughtless acts (Suri 2005, 182f). (iv) Open source innovation. Consumers are both designers and producers, e.g. fan mash ups of famous movies (Gauntlett 2011, 73). Mobile prosument is to a lesser extent dependent on location than industrial production was during industrialisation but flow of materials is a crucial point for mobile factories (Fox 2014, 27–28). Another perspective of craft is reducing costs by point of demand prosument (Fox 2014, 22).

Entrepreneurs and micro-entrepreneurs (up to 4 employees) have become increasingly important for the development of the craft sector (Müller 2013, 639). Small businesses with up to 20 employees are predominant. Long term employment is common due to strong
personal relationships. Small businesses with a higher adaptability and flexibility than large companies contribute to economic stability (Thomä, 2011, 127). Managers in small enterprises are often more likely to assume responsibility for their employees than in larger companies (Ax & Hinterberger 2013, 339).

Innovation in the field of craft often takes place in secondary functions of the value chain, i.e. service functions. In respect of the value chain (development-conception-production-marketing-application-recycling), industry tends to shorten the phase of usage because of low profit margins (Ax & Hinterberger 2013, 232). Repairs have become unprofitable because of the mass production of cheap products (Ax & Hinterberger 2013, 113). Craft can result in a re-evaluation of obsolescent and alternative concepts for leasing products, repairing and maintenance work.

Crafted products often reflect true-costs. True cost design deals with the consumption of resources, e.g. work, energy, matter, food, space, time due to bad design decisions (Thackara 2005, 1). Costs for negative external effects which design products can bring about should be taken into account for their price calculation, e.g. costs of illness caused by harmful products, costs of environmental pollution (Thackara 2016). According to this true cost pricing approach, ecologically sustainable products are the cheapest when negative external effects are included in the price calculation. A burger would cost 200 US Dollars if all such costs would be taken into account (Habermann 2011, 155). In true cost design early calculations should help to avoid bad design decisions. Different phases of a technical device should be considered to determine whether these costs are expected by customers (Lasn 2006, 73), e.g. costs of power, original costs, waste disposal costs. To illustrate how designed interfaces or products can obscure real energy costs in favour of comfort, Hall (2009, n.p.) discussed a successful thermostat designed by Henry Dreyfuss 1941–1953. Behavioural patterns can be influenced by scripts inscribed in user interfaces or objects. Products can prevent unnecessary waste occurring or force resource-saving usage, e.g. snapping back water taps, accented electricity meters, large fuel consumption displays (Hall 2009, n.p.; Lasn 2006a, 72; 2006b, n.p.). Usage protections or scripts in products can support true cost pricing by minimising wasteful consumption, but this can restrict later consumption (Schwingshackl 2012, n.p.) or rebound-effects (Ax 2014, 213). Designing cars with automatic speed control systems is insufficient because the question is how drivers change their appropriation and evaluation (Schwingshackl 2012, n.p.). By means of craft bottom up innovation and small scale business sustainability can be encouraged and pursued in a holistic approach (Thackara 2015, 9).
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