PISEN

III/01-02

Copytheft – Cultural Practices
Transgressing Copyright Boundaries

Disegno

Journal of Design Culture

Double blind peer reviewed open access scholarly journal. Not for commercial use.

Aims and Scope

Disegno publishes original research papers, essays, reviews on all possible aspects of design cultures. The notion of design culture is understood by us as resolutely vague: our aim is to freely discuss the designed environment as mutually intertwined flows of sociocultural products, practices and discourses. This attitude openly ventures beyond the academic distinctions between art, design and visual culture being accordingly open to all themes with relation to sociocultural creativity and innovation. Our post-disciplinary undertaking expects intellectual contribution from all potential members of different design cultures. Besides providing a living platform for debating issues of design culture our particular aim is to consolidate and enhance the social legitimacy of design culture studies as an emerging field in the Central European academe providing criticism of fundamental biases and misleading cultural imprinting with respect to the field of design.

All articles published in Disegno will go through a rigorous double-blind peer review process.
This journal does not charge APCs or submission charges.

Disegno is sponsored by public funds, therefore it is freely available in both print and on-line formats.
Print copies are produced in limited numbers.

Contact: *Moholy-Nagy University of Art and Design, Insitute for Theoretical Studies*
H-1121 Budapest, Zugligeti út 9-25.
Editors: disegno@mome.hu

The full content of Disegno can be accessed online: ***disegno.mome.hu***

Published by: *Fülöp József*
Publisher: *Moholy-Nagy University of Art and Design, 1121 Budapest, Zugligeti út 9-25.*

MOHOLY-NAGY MŰVÉSZETI EGYETEM
MOHOLY-NAGY UNIVERSITY OF ART AND DESIGN BUDAPEST

Printing: *Print City Europe Zrt.*
ISSN: *2064-7778 (Print)* ***ISSN:*** *2416-156X (Online)*

The edition of Disegno has been supported by the publisher of OCTOGON architecture & design magazine, Vertigo Publishing.

OCTOGON
ARCHITECTURE
&DESIGN

The project has been realized in connection with the title of the "University of National Excellence" of Moholy-Nagy University of Art and Design Budapest.

Supported by:

Emberi Erőforrások
Minisztériuma

Contents

DISEGNO_III/01-02_COPYTHEFT

ON "OPEN" AUTHORSHIP: THE AFTERLIFE OF A DESIGN

Deanna Herst, Michelle Kasprzak

ABSTRACT

This article discusses the ramifications of open design for "author-driven" contexts in the curriculum of the Open Design program (profile: Social Practice) at the Willem de Kooning Academy, University of Applied Sciences, Rotterdam, as a primary case study. We intend to question the supposed juxtaposition between the principles of open design (sharing, participation) and traditional notions of authorship (exclusivity) by investigating "open authorship". Moreover, how could the aesthetic dimension contribute to a socially or individually relevant "afterlife" of the design for the user?

Open design is defined as design whose creators allow it to be freely distributed and documented and condone modifications and derivations of it *(Abel, Bas van, and R. Klaassen, 2011). It mainly borrows from two traditions: open-source technology (accessible digital fabrication) and participatory design (social involvement and relevance). These perspectives secure the "afterlife" of a design the user iterations.*

Besides these user-driven domains, we can also witness the emergence of open design in 'author driven' design fields. Besides open source software and online sharing, the visual language and open-ended structure of Jens Dyvik's Layer Chair *(2012), for example, provokes user iteration. In its afterlife, his chair becomes an object in flux. This open form of authorship questions the author's exclusivity, embodying a paradigm shift in authorship.*

This paper also explores the notion of "open authorship" through examples from the Open Design program of the Willem de Kooning Academy, University of Applied Sciences, Rotterdam. One of the objectives is to investigate the as yet underexposed aesthetic tradition of open design and its possible relevance for art and design education. This is embodied as "open form", a (historical) perspective on openness from an author's point of view (Wölfflin 1929, Eco 1962, Hansen 1959, Raaijmakers 1988-92).

We discuss how a series of open-design methods and working with "non-expert expert" communities have encouraged new design approaches to aesthetics and participation. The results show that an aesthetic is not necessarily about beauty, but more importantly functions as evidence of a process that allows for flaws to become a part of a product. We believe these are the hallmarks of an emerging "open design aesthetic".

#open design, #open authorship, #open-design aesthetics, #knowledge sharing, #participation, #non-expert experts, #social design

doi:10.21096/disegno_2016_1-2mk-dh

1. INTRODUCTION: THE AFTERLIFE OF A DESIGN

"There can be beauty—convulsive beauty—only at the price of the formation of the reciprocal relationship that joins an object in movement to the same object in response". (Breton 1937)

In 1927 *La Révolution Surréaliste* published the first *cadavre exquis* (Breton 1927), a procedural and collective poem, drawing, or painting, made according to a participatory method. One person is responsible for the first line of the drawing or the sentence of the poem. By folding the sheet, one line or word remains visible for the next participant, making the completion of a *cadavre exquis* a collective work. As an artistic statement, it questions the concept of "the author as genius", as the participating artists remained anonymous: who is the author; the inventor of the game, or the participants who completed the piece?

This avant-garde surrealist collaborative method embodies a paradigm shift in authorship that remains relevant to contemporary open and participatory design. Nowadays, we can see similar participatory, open-design practices that investigate the open process and open-ended result in order to make the design more relevant to the people that use it. Networked technologies and digital fabrication have encouraged the process of open design and design sharing, as can be seen in the Fablab network, for example. The relevance of these new, open, and participatory design practices has recently been discussed from the point of view of new modes of production and new possibilities for manufacturing (Troxler 2015).

Focusing on the notion of "open authorship", this paper intends to investigate the so far underexposed aesthetic context of open design and its possible relevance for art and design education. Examples will be taken from the Open Design program (profile: Social Practice), Willem de Kooning Academy (WdKA), University of Applied Sciences, Rotterdam. Besides reflecting on the ramifications of networked production, digital fabrication, and the social objective of design sharing, the aim of this program is to explore "openness" from the perspective of the designer. Educational practice at WdKA shows that designing for users sometimes encounters resistance among students and opens up questions related to the space for experiment or artistic expression. As our students are not educated to become engineers or social professionals but artists and designers, the program also focuses on

its artistic context and the exploration of a possible common ground between participatory artistic strategies in order to develop parameters for new open design practices. As such, it aims to reconsider traditional notions of authorship within contexts of collaboration, participation, and iteration. The central questions include: Could open design learn from artistic strategies that specifically aim at participation and iteration, like the *cadavre exquis* model, for example? How can a participatory product or process be designed such that leaves room for the expression of both designer and user (open and participatory methods)? What is the role of an online platform as an intermediary between the designer and the user? (Herst 2013)

Open design is an approach towards designing participation and iteration by stakeholders, as presented in 2011 in the publication and online platform Opendesignnow.org. However, it is not an entirely new phenomenon; it has its primary origins in the open source engineering tradition. Until now, open design has mainly been practiced in product design and investigated in contexts such as art and design schools (for example, Willem de Kooning Academy, Master Open Design, Humboldt-Universität Berlin, Universidad de Buenos Aires).

The following is a commonly employed definition: *Open design is design whose creators allow it to be freely distributed and documented and condone modifications and derivations of it* (Open Design Now 2015). An alternative definition is: *Open design is the development of physical products, machines and systems through use of publicly shared design information. The process is generally facilitated by the internet and often performed without monetary compensation.* (Wikipedia 2015) Or, thirdly: *Open design signifies open-access digital blueprints that can be adapted at will to meet situated requirements, and can subsequently be used by consumers to fabricate products on demand by commercial, off-the-shelf production method.* (Avital 2011)

According these definitions, open design's properties include: 1) the design of physical objects; 2) open production and design process, open-ended product; 3) online design knowledge dissemination; 4) creating personal relevance for all stakeholders.

An example that embodies these parameters is the *Layer Chair* (2012–) by designer Jens Dyvik. The *Layer Chair* could be seen as a "design exquis", a design interpretation of the *cadavre exquis*. The further development of the work through iterations by its users is implemented within the concept of the design. This not only expressed through the online dissemination of knowledge (blueprint, manual) but also through the use of parametric software (Rhino, OS plug-in Grasshopper) and modular elements. Several people have developed twelve iterations in twelve countries, for different needs and purposes, including a chair for playing the cello and a sofa developed with local material. Examples of adaptations and "new" authorship include the *Layer Stool* by designer Nick Graham and the *Layer Chair, Viking*

edition by Haakon Karlsen. As such, the *Layer Chair* reveals a specific open design approach that targets designers and makers, showing that "open" does not always necessarily imply openness for everybody and for all users, as it is often and commonly interpreted.

LAYER CHAIR, JENS DYVIK, DYVIK DESIGN

Fig.1. Layer Chair, Amsterdam edition, *collection of three*, *Jens Dyvik*, *Dyvik Design* *http://www.dyvikdesign.com/site/portfolio-jens/the-layer-chair-amsterdam-edition.html*

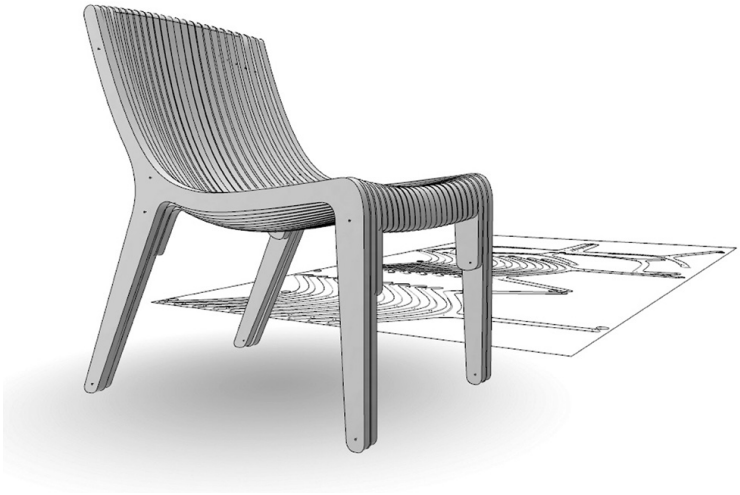

Fig.2. Layer Chair, Lounge version, *Jens Dyvik*, *Dyvik Design* *http://www.dyvikdesign.com/site/wp-content/uploads/Layer-Chair-CNC-Lounge-version-DyvikDesign.jpg*

Fig.3. Layer Stool, Wellington version, *iteration by Nick Graham http://www.dyvikdesign.com/site/research/fablab/layer-chair-iteration-by-nick-graham.html*

Fig.4. Layer Chair, Viking edition, *iteration by Haakon Karlsen and Jens Dyvik http://www.dyvikdesign.com/site/portfolio-jens/the-layer-chair-viking-edition.html*

The *Layer Chair* expresses an important promise of open design: the afterlife of the design, based on user iterations by designers and makers whose names are also mentioned in their re-designs as new authors. By providing open-ended products, open design "out sources" the evolution of the design to its users, in a way allowing them to question the author as "genius". The design becomes an "object in flux" without a fixed end result. The designer has become a meta-designer, an initiator of a design process with unknown and uncertain results, marking a paradigm shift in (artistic) authorship.

This development raises several questions: concerning authorship and ownership—what happens to the designer's "unique" signature and intellectual property?; concerning openness related to authorship—what room is there for designer expression and experiment in a user-centered context?; concerning tradition—what is the role of the aesthetic tradition within this user-centered approach?; and, most importantly, concerning its own promise—how to stimulate user iteration?.

2. THE AUTHOR AND THE USER

Openness, embodied by participation and user iteration, disrupts the traditional concept of artistic authorship, commonly defined in terms of "authenticity" or the "author as genius". This notion has historically been applied to literature and the arts for the validation of quality and originality. As a "genius", the author is the originator of a work and bears responsibility for it. Since the late nineties, this debate about authorship has also been present in design, in order to validate the applied arts as artistic expressions. In his essay "Graphic Authorship", Yale Design professor Michael Rock identifies several models for defining authorship: the designer as self expressionist (artist's books, Dieter Rot), the designer as a critical writer and producer, the designer as a constructor of narration (Irma Boom), the designer as a self-referential or critical creator. (Rock 2004) What these roles have in common is their autonomy and freedom from applied contexts (client's wishes/ user's needs). Self-expression, critique and experiment confirm the designer's status as an author. In "self-authored design", the designer transcends her/his role as a "service oriented" producer and reaches an autonomous status. As Steven McCarthy writes: "self-authored graphic design is a dance between two central partners with varying degrees of differentiation: the designer as self and the content. The designer as self is recognition of the central presence of the designer as a voice and a vision in the process of form-creation and message-formulation." (McCarthy 1996)

The conference *Authorship in Design* (Mainz, November 20–21, 2009) investigated the role of the graphic designer in the time of media design. It proposed possible future artistic roles of the designer/ author: "a visual explorer, a meaningful narrator or a developer of inter-medial tools", in short: a meta-designer, a role that now seems equally appropriate for open designers. (Authorship in Design 2009) Here, the notion of the meta-designer represents the need for a new, inclusive notion of authorship: a locus where the input of both author and user is negotiated. How could we redefine this (design) authorship? As Rock mentions, what will be the designer's space for, expression, critique, or narration in this hybrid, shared context?

3. ON THE ORIGINS OF (SHARED) AUTHORSHIP

"It is not enough, however, to repeat the empty affirmation that the author has disappeared. For the same reason, it is not enough to keep repeating (after Nietzsche) that God and man have died a common death. Instead, we must locate the space left empty by the authors disappearance [...] and watch for the openings that this disappearance uncovers." (Foucault 1969)

Several definitions of authorship can be identified in Western history. In philosophical and legal terms, the main notions of authorship refer

to the author as "originator and owner of an idea" and, within artistic discourse, the author as "genius". These concepts predominantly refer to the Platonic concept of the "divine idea" (*idein*) that embodies the "essence or inner structure of things". According to Plato, ideas are inseparable from "form" (*eidos*), as described in his Theory of Forms. In Plato's view, the real world does not exist in material things but only in ideas. Therefore, only ideas can represent the truth and are to be considered the only objects of knowledge. These concepts were adapted and applied to definitions of legal authorship (ownership of ideas), scientific authorship (validation of 'truth') and artistic authorship (artist/designer as "genius").

In the Middle Ages and Renaissance, authorship was first related to the sciences, to validate the "truth" of the author's ideas. As such, it could be considered a first stage in defining intellectual property. In the seventeenth and eighteenth centuries, this concept shifted to the artistic and legal position of the author in literature, where the individual writer manifested himself as the originator and owner of an idea. In the age of the printing press and the birth of copyright, writers were compelled to distinguish themselves for economic reasons, and began to claim rights over their own works. Hence individual authorship was not only articulated through the creation and ownership of ideas, but more specifically, through the translation of these ideas in *expressive form* as a reflection of a "unique personality". (Fichte 1791)

From the turn of the nineteenth century, this notion of authorship was related to the romantic ideal of author as "genius", and developed into the modernist concept of "originality", which was expressed in both formalism and conceptualism. Deconstruction of the myth of the author as a "genius" started in the late 1960s with critical cultural theorists (Barthes, Foucault, Eco), who denied any "god like character". By introducing the audience as contributors to the completion of the—proposing an "open work"—these perspectives can be considered an important context for open, participatory design practices. I will elaborate on these in section five.

According to Carla Hesse, shared authorship originated in eighteenth century discourse about intellectual property, embodied by the debate between Diderot (1713–1784) and the philosopher/mathematician De Condorcet (1743–1794) (Hesse 2005). Diderot, like his predecessors John Locke and Edward Young, was one of the protagonists of the notion that authors are "natural owners of the idea", which represents a "unique creation of the mind". Copyright should therefore protect intellectual property, a statement also embraced by publishers and other intermediaries between writers and audiences. (Hesse 2002)

Opposed to this, De Condorcet proposed a *utilitarian* view on intellectual property. For him, ideas are not created by God or a human being, but already exist in nature. Therefore, ideas should be public and contribute to a social experience. (De Condorcet 1776) For this reason, De Condorcet was strongly opposed to the use of personal style and

expression to validate authorship: "It is thus uniquely for expressions, for phrases, that privileges exist." (Hesse 2002) According to him, an idea was the result of a social creation and could only be valuable on the basis of its social utility.

These two historical views on authorship (ownership and "usership") embody the contemporary paradigm in open and participatory design practices. Within this context, the perspective from "ownership of ideas or forms" to the *responsibility for the participatory form and its aesthetics* needs further investigation. In the debate between Diderot and De Condorcet we might find an approach for open authorship by exploring both perspectives of *form* and *utility* as well as *hybrid in-between states*.

4. AN UNDEREXPOSED TRADITION OF OPEN DESIGN

In order to find parameters by which to define open authorship and aesthetics, we need to focus on an as yet overlooked background of open design: the aesthetic tradition. If we look at the definitions and practices of open design (open product and process, knowledge dissemination, personal and social relevance for users) we can relate it to three traditions.

4.1. Technological innovation: knowledge dissemination

After open source software, the concept of openness in hardware was first applied in engineering. As the mission statement of the Open Design Foundation (2000) reads:

The mission […] is to promote an alternative method for designing and developing technology, based on the free exchange of comprehensive design information. The ODF provides the collaborative space to foster open source physical design, and seeks to strike a balance between the independence of individual designers and the collective power of collaboration. The ODF hopes that this method will enable and promote design projects, which are motivated by personal conviction and passion of designers for the greater benefit of a global society. (Opendesign.org 2000)

The principles of sharing design knowledge, collaboration and modification of the product have been applied specifically to tools and machines. A well-known example is the self-replicating 3D printer RepRap (RepRap.org 2007), several generations of which have been developed as a result of user iteration by a expert community. What many open hardware projects designs have in common is modularity of the product, which allows users to develop parts separately. Online platforms (toolkits, manuals) are used for knowledge distribution and development. This model can also be found in the concept of FabLabs, which share an identical digital fabrication inventory in their global network in order to share knowledge and innovate from a technological point of view. The participatory incentives are the aim of

both technological development (global communities of expert users) and working for social or personal objectives.

4.2. Participatory design: social change and relevance

The social dimension of open design can be compared to the Scandinavian tradition of participatory design, as defined by Pelle Ehn:

Participatory design is characterized as an approach to involve users in the design and (as suggested by Redström) in the design process encounter "use-before-use". (Ehn 2008)

Participatory design originated in cooperative design, derived from Scandinavian organizational models of the late 1970s. These aimed at a socially oriented organizational change through the equal exchange of knowledge between workers and researchers. (Bødker, Ehn, Sjøgren, and Sundblad 2000) As an approach to empowerment, participatory design was based on the belief that anyone involved in creating or using the design should also have a say in the design process: researchers, designers and end-users should already collaborate in the prototyping stage in order to make the design more relevant. An important objective of this design process (based on social interaction) was to gather not only formal knowledge, but, especially, tacit knowledge from the participants. (Ehn 1991) The principle of involving stakeholders in the design process can be seen in several design approaches, such as social or human centered design.

Participatory Design (PD) today is an emerging design practice that involves different non-designers in various co-design activities throughout the design process. By non-designers we refer to potential users, other external stakeholders and/or people on the development team who are from disciplines other than design such as those in marketing, engineering, sales, etc. PD processes usually involve many people having different backgrounds, experiences, interests, and roles within the project.(Sanders, Brandt, Binder, 2010)

In a later interpretation of participatory design, Ehn proposes the design of Things (socio-material assemblies) instead of merely "things" (objects), a design process that requires appropriate infrastructures. (Björgvinsson, Ehn and Hillgren 2010) Socially oriented open-design projects have expanded collaboration with the design of infrastructures and systems for collaboration. One example is the "Low Cost prosthesis" project, a fifty-dollar prosthetic leg co-developed by Waag Society Amsterdam, FabLab Yogyakarta and the rehabilitation center Yakkum, Yogyakarta. The project was created with the input of users, designers and medical scientists in the early stages of the development process. (Schaub et al. 2015) It was a response to an urgent social and medical situation: the increasing rate of below-knee amputations related to diabetes in Indonesia. Due to financial and social reasons, it is common that amputees see doctors infrequently. To meet their needs, (self-) adjustability of the prosthesis and the use of local materials (bamboo fiber) were important parameters. Here openness is implemented in

both the development process and the result, which is always under construction because of new user insights and material research.

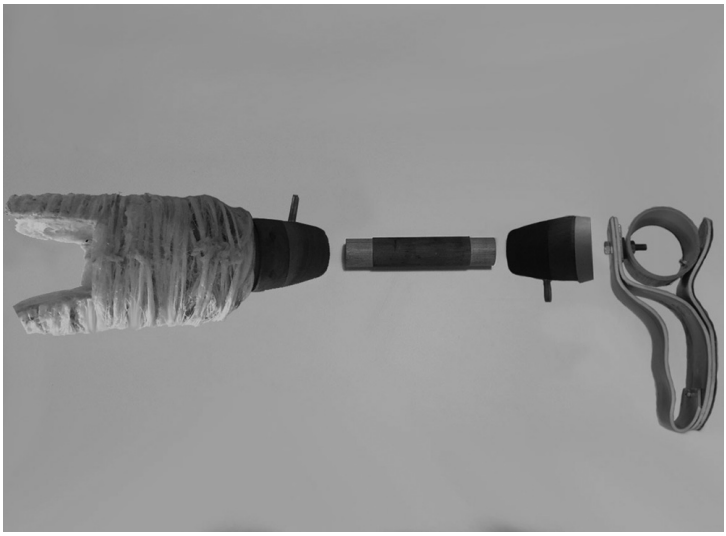

Fig.5. $50 PROSTHESIS PROJECT, *Waag Society (Alex Schaub, Jens Dyvik, Paulien Melis, Deanna Herst, Mickael Boulay, Takuma Oami, Angelika Grundmann, Sylvie Claes), HONF Fablab, Yogyakarta, Yakkum Rehabilitation Center, Yogyakarta http://opendesignnow.org/index.php/case/fifty-dollar-leg-prosthesis-alex-schaub-et-al/*

In the cases mentioned, the open process, the open-ended product, and knowledge dissemination have instigated user involvement and iteration. The incentives for participation included the sense of involvement (stakeholders, communities), technological innovation and social urgency. But which aesthetic open and participatory strategies can we witness in open-design practices?

4.3. Open Form: artistic frictions

The origins of open design within open engineering and participatory design can be clearly identified, its objectives of technological innovation and social urgency securing its iterations and the "afterlife" of the design. However, in projects where the designer's artistic identity is at stake, "openness" seems to become controversial. For example, the Open Design Contest (Opendesigncontest.org), a repository to encourage open design derivations, shows many uploaded designs, but hardly any iterations. According to a participant:

"*there is a difference between what you use from other designs as an inspiration for your own design, and basing your design entirely on somebody else's. Originality is important to a designer, and designers aren't used to explicitly recognizing others for contributing to their design. This makes us choose the safe way by inventing something new*". (Abel, B. van 2011)

From an artistic point of view, there does not seem to be urgency for iteration. The problem at stake is the quest for originality and self-expression, in other words, for authorship of the work.

Similarly, in 2011, Dutch design studio Droog launched a platform for "downloadable design", "(...) which will feature curated and

open content, easy-to-use parametric design tools and a network of local low- and high-tech manufacturers." (Droog 2011) Although it was initiated as an open-design project, Droog states: "Open design is an interesting concept but also a tricky one. Do we really want our world flooded with a stream of ugly objects? And is the consumer really prepared (or capable...) of designing for himself?" (Ramakers 2011) As a consequence, the platform was curated for quality reasons, representing the tensions within the paradigm of authorship and openness.

Though the projects mentioned employ some properties of open design (open production and process, open-ended product, knowledge dissemination), the fundamental principle of user iteration is often not met. The responses show that the "designer as author" and "originator of an idea" (Diderot) is still associated with the designer's signature in the end result and this leaves little space for users. Unlike open-source engineering and participatory design, open design's aesthetic tradition has not yet been identified as a referential frame. How can we find an approach for open design and authorship by exploring both the perspectives of form (Diderot) and (social) utility (De Condorcet)?

4.4 Open Form: "invitational aesthetics"

It is within this context that the concept of open form (Wölfflin 1929, Hansen, 1959, Eco, 1989, Raaijmakers, 1988-92) could be reintroduced to validate open design and to contextualize it within an aesthetic tradition. Originating from art history, the exploration of the open form could offer possible parameters for "open" authorship. From this perspective, viewer participation has been defined as both interpretative and "real", referring to real participation with audiences as contributors (Eco 1989). More concretely, the open form has been proposed as a theoretical framework for contextualizing participatory agency in (applied) arts. Influenced by the psychological theory of empathy, art historian Heinrich Wölfflin proposed the "closed/tectonic–open/a-tectonic form" as a parameter by which to interpret works of art. (Wölfflin, 1929) According to him, the open form allowed us to identify artworks that, by their dynamic form, leave the viewer more room for interpretation, in other words, to mentally finish the work.

In the *Open Form Manifesto*, architect and artist Oskar Hansen described how "real" participation could emerge from interaction between an artwork or design and its context. Hansen proposed the open form as a social and anti-hierarchical solution for artists, architects, and designers to meet the needs of their audiences (comparable to participatory design) and to also include these dynamics in their conceptual and formalistic approach (similar to Wölfflin's view of the "a-tectonic"). (Hansen 1959)

Composer Dick Raaijmakers' notion of "open form" originated in a more radical artistic principle. The Fine Mechanics of the Open Form (1988-1992) describes his approach to open form as a cultural critique of the closed nature of technology in consumer culture, comparing it

to the closed structures of classical compositions. He compared both systems to independently working machines that encourage passivity in the audience. (Mulder & Brouwer 2009)

Although open form is approached from different perspectives (interpretative, social, technological), these views share an interest in audience involvement through an unfinished work, an artistic strategy that marks the authors' "signature". Looking through the lens of the open form, it exposes a void in current open design practices: the closed-ness of the design product itself. "Openness" is mainly applied to knowledge dissemination (open-source technology) or process (participatory design), however, not to the designs themselves, as in the modular *Layer Chair* or the *Cadavre Exquis* system. When taking the open form as a possible new framework, we need to explore the unfinished work as an incentive for user iteration and appropriation. What happens if we open up aesthetics within the context of utilitarian infrastructures and social processes? In this context, we will especially explore the scenario of "real" participation and its possible use for open design education.

5. CASE STUDY: OPEN DESIGN PROGRAM, WILLEM DE KOONING ACADEMY

"The poetics of the 'work in movement' (and partly that of the 'open' work) sets in motion a new cycle of relations between the artist and his audience, a new mechanics of aesthetic perception, a different status for the artistic product in contemporary society. It opens a new page in sociology and in pedagogy, as well as a new chapter in the history of art." (Eco 1989)

The paradigm shift and debate about openness in design authorship—as has become manifest in art education—has instigated the undergraduate program Open Design at Willem de Kooning Academy, University of Applied Sciences, Rotterdam. The aim is to investigate a possible common ground between social, technological, and artistic design approaches, a form of design authorship where the (social) utilitarian (De Condorcet) and the aesthetic (Diderot) meet. Because the aesthetic tradition of open design is still relatively unexplored, we will introduce open and participatory strategies to complement the conventional set of design methodologies.

The Open Design program consists of interdisciplinary courses in the second year of study, a pre-minor in the third year, and a minor and graduation program in the fourth year. Each course introduces certain participatory and open strategies focused on aesthetics in relation to designing for users, which exposes students to "artistic frictions" as a result of this often complicated relationship. Students are challenged to critically reflect upon the fundamental properties of open design. The questions include: What is openness in design? What is open authorship? What are aesthetic design strategies for instigating participation, iteration and appropriation within the context of social needs and desires?

The strategies introduced in the courses are mostly derived from artistic practices, which are then questioned and explored within design projects. Examples include: *Cadavre Exquis* (elective course: exploring the open form and iteration), *'Opening up. the (his)tory of things* (second year: "design autopsy", questioning the closed nature of mass products), *Collective Collection* (second year: collaborative design, networked infrastructures), *Cultural Probes: confrontation pieces* (third year: creating dialogue through provocative design), and *Non-Expert Experts* (minor, fourth year: disseminating expert-amateurs' knowledge, user-based design).

Each course also offers the students new approach for their practice: whether testing provocation to generate user input, exploring the open form in relation to iteration, employing an ethnographic method in the Non-Expert Expert project or using prototyping and iteration methods in Collective Collection.

An example of a social open design project exploiting the aesthetics of food waste is the *Fairphone Case* (2013) by student Jolien van Delft. It uses an online system that invites people to make a mobile phone case for the Fairphone, a smartphone developed using open design principles. Users create their phone cases using everyday waste, and the site provides instructions for using the phone case as an open form in a networked context. The results show that the aesthetic of the final product (many cases are "lumpy" and strange looking, a contrast to the slick smartphone it envelops) is not about beauty, but evidence of a process that allows for flaws to become a part of a product and for genuinely unique results given the materials used. The *Fairphone Case* provides evidence of an emerging "open-design aesthetic", a (visual) language to be developed to encourage users to participate.

5.1 Collaborative aesthetics

Collective Collection (second year) focuses on collaborative authorship and "open", participatory strategies in various design fields like product design (open design), graphic design (open-source typography) and fashion (open-source fashion). What happens to your role, identity, product or collection when it is composed in a (networked) collaboration? Students were required to design a collective collection (literally: a collectively-designed collection of works) based on possible needs, behavior, fantasies, frustrations or fears of users. They learned to direct a participatory design process by exploring instructions, rules or recipes, and to explore the participatory properties of the product. They were also encouraged to use prototyping and iteration techniques to explore possible ways to approach their chosen product.

Will Bindley's project *Artists and their Notes* solicited screenshots of the "Notes" program on smartphones owned by artists. Inspired by street photographers and "readymade" collections such as the accumulations of objects in lost and found bins, Bindley ultimately decided to focus on explicitly sharing ideas through social media. The screenshots of the

notes application are sometimes arbitrary lists or reminders, and often also ideas for projects or objects. By posting these private notes on a public website (Bindley created a Tumblr blog for the project) and also creating a handmade zine to distribute the ideas, Bindley invites anyone to act upon the growing collection of half-articulated ideas and make them into projects, modify them, and in some cases, complete them.

Sophie Dirven's *Memory Your Memory* project worked with the residents of a care home for the elderly in Rotterdam. Dirven interviewed the residents of the home, soliciting their most treasured memories and anecdotes. She then worked with the residents to draw a representative image of that memory, which was laser cut into a wooden game piece. The final game works much like the child's game "Memory", where tiles are placed face down and players flip tiles over and then put them back, trying to find matches and remember where the tiles are as they play. Thus, a common memory game is given more meaningful content, and provides a conversation piece for the residents as they play together and share their stories. The game itself functions as a collection or archive of the residents' memories. The game is also open-ended and extendable: a new collection of memories can be added to the game at a later time.

5.2 Confrontation Piece: provocative aesthetics

Secret Stories of Users. A Confrontation Piece (third year) introduced students to participatory design techniques through cultural probes and user research. They investigate how user research could also be used as a "tool" for participatory storytelling. How could secret stories about personal needs and fascinations of users inspire the design and contribute to its relevance? Taking the cultural probe as a starting point, the assignment challenged students to design a "confrontation piece", a thought-provoking design intervention intended to connect with hidden stories, knowledge, and the skills of local artisans.

The project *Memre* (memory) by Hilko Idsinga focused on forgotten crafts from the Surinamese community in Rotterdam West and on ways to open up their knowledge for future generations. Through interviews in the neighborhood, he discovered that in Surinam, women used to make jewelry and toys from local fruits and kernels. How can jewelry and puppets making of seeds and nuts be reintroduced into the daily lives of expatriate Surinamese? His aim was to design a kit that encourages cultural fusion and inspires women to once again take up their former "craft" using similar Dutch fruits. This knowledge could then be transferred to children in order to honor and restore the craft. For his research project, he created a "kit", whose aesthetic is reminiscent of the Surinamese Awara nut and which contains a combination of both Dutch and Surinamese materials, to make jewelry. When testing this confrontation piece, the object appeared to trigger many specific memories of Suriname. Based upon this outcome, he designed a new kit including a book to collect and disseminate stories about the objects. As a trigger for further participation, he designed new jewelry and shared his blueprints online.

A second example of collecting and sharing knowledge through a design intervention is the public loom (commissioned by the local and up-and-coming Maker Space), which collects artistic techniques from people in the neighborhood. Students set up a human sized loom in a public square, using alienating aesthetics and exaggerated dimensions to draw the peoples' attention. This confrontation piece triggered various responses; women shared their special weaving techniques, while with others revealed personal stories. Because of these unexpected results, the loom became a tool for both skill and story sharing, providing useful insights in the neighborhood's daily life. Maker Space will use these results in their workshops.

These are two examples that show the exploration of aesthetics to encourage knowledge dissemination: one by referring to memory, the other by provoking the audience.

5.3 Opening up: Sharing "Non-Expert Expert" knowledge

As noted in our discussion of the three traditions supporting a notion of open design, it is clear that there are particular groups and communities with vested interests, and who invent, design, and create without being recognized as designers, artists, or even as being creative. This group of "non-expert experts" (Kasprzak 2014) may be highly skilled and devote exceptional amounts of time and money to their craft, but, without the validation of an art academy education, critical reviews, or engagement with particular niche marketplaces, they operate under the radar. In many ways, the "non-expert expert" groups, who focus more on explicitly creative output, are a slightly different variant of the "pro-am" concept described in a paper published by the think tank Demos: "amateurs who work to professional standards". (Leadbeater & Miller, 2004). As groups with enormous talents and expertise, these non-expert expert communities are ideal for forming collaborations with practitioners in other disciplines, including design.

The recent Open Design Minor program requires the students to seek out, engage with, and co-produce an open design project with a community which holds deep, and possibly unusual, knowledge. The course syllabus states: "This project challenges you to develop a dialogue between non-expert expert makers, audiences and designers. Eventually you will define your own approach to open design. Think radically – open doesn't mean allowing people a constricted set of choices (e.g. a dress offered in different colors and lengths) but having an honest, deep, and challenging engagement with user groups and communities to stretch the limits of your design concept." (Kasprzak & Herst 2015)

In addition to being encouraged to discover non-expert expert communities themselves, the students were provided with a range of non-expert expert communities for their research. The intention was to break down the roles between designers and "amateurs" and have the students interact with groups which hold informal knowledge in a wide range of subject areas, and recognize that this informal yet valuable

knowledge production often remains unknown to a wider audience. The groups' discussions and approaches included a broad range: road-kill chefs, DIY synthesizer enthusiasts, guerilla knitters, and miniature vegetable gardeners. The students were instructed to use an ethnographic approach, spending time with their target groups to first understand the group and its practices, and later understand how they could contribute.

To look at one example in detail: the electronic music community is enormous, and Dylan Degeling found an interesting niche within it in the active group of DIY synthesizer makers. Working mostly through online forums at first, Degeling developed a concept for a solar-powered DIY synthesizer which could be made in a modular way. Continually testing and obtaining feedback from the community, both in person and online, Degeling eventually developed a sophisticated prototype using an Arduino prototyping board[1], and he released the source code to the community.

[1] *An interesting note is that the Arduino electronics prototyping board is itself an open-source project, and a little-known feature of its history is that the Arduino was "forked" (copied) from an original, largely uncredited work by Hernando Barragán, who dubbed his open-source prototyping board "Wiring". The full story is the detailed here: http://arduinohistory.github.io/*

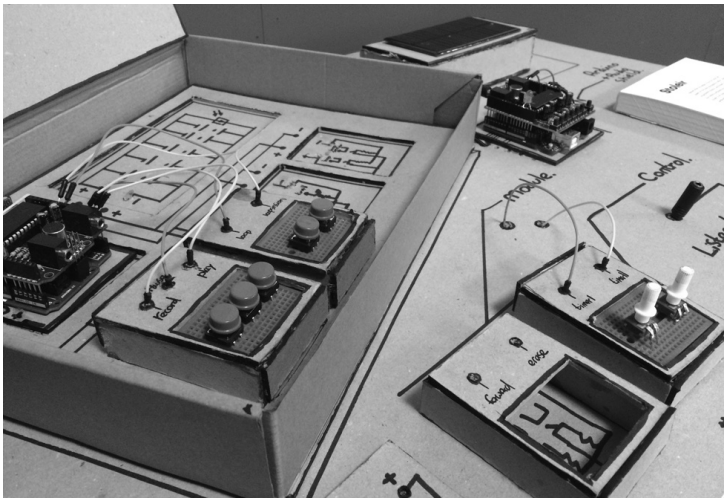

Fig.6. STOLEIR, open source, renewable, energy powered, cardboard, modular synthesizer prototyping kit. *Dylan Degeling, student, minor in Open Design*
http://stoleir.dylandegeling.nl

The project *Exchange Knitting* shows fashion student Yvonne Swiers' fascination for knitting techniques. She collected these skills from various sources (knitting clubs, specialists in open knitwear) and continued her search through an online platform she developed, thus both collecting and disseminating knitting knowledge. On her site she invites knitting enthusiasts to both upload and use files in order to preserve knowledge. At the same time, the project is about exploring collaborative aesthetics. In her own collection, she uses patches from different knitting techniques resulting in a "Frankenstein" dress or cardigan collection that reflect both her and the users' identities. At the same time, this project also questions openness in design. Embodying the paradigm of open design for artists, Yvonne encourages sharing of the techniques, but is clear about her role as designer, as author of the project and the collection.

EXCHANGE KNITTING, the knitted patchwork collection based on shared knitting knowledge.
Yvonne Swiers, student Open Design

Fig.7. Exchange Knitting, *coat, Yvonne Swiers*

Fig.8. Exchange Knitting, *collar, Yvonne Swiers*

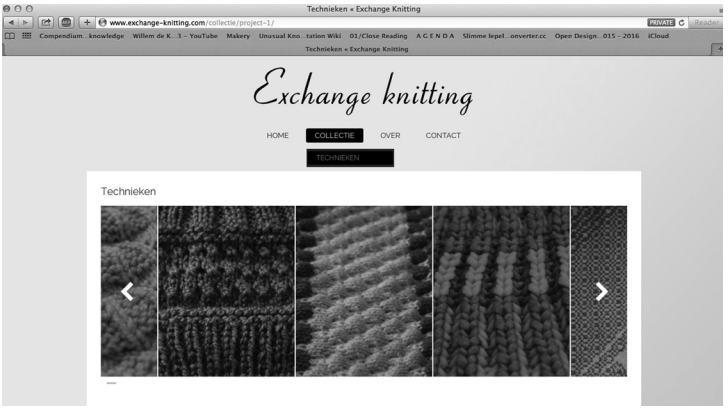

Fig.9. Exchange Knitting platform, Yvonne Swiers http://www.exchange-knitting.com

Shared aesthetics and knowledge are also fundamental aspects of *Wheelshare* by advertising student Wietske Lutgendorff, who closely collaborated with an expert wheelchair user (Eric Groot Kormelink) during the developing stage. With this project, she intends to make wheelchair users and their environment visible by providing them with an open source toolkit and platform. With this she allows them—as experts of the experience—to show what kind of obstacles they encounter on a daily basis. The project consists of a downloadable ready-to-print 3D file of a grip for a smartphone. Once the wheelchair user' phone is mounted onto their chair with the custom grip, they are encouraged to record videos of their movements through the city, including all the obstacles they encounter. The *Wheelshare* website makes the users and their videos visible, public and shareable.

Wheelshare exploits the aesthetic power of multiple perspectives and camera views to keep the viewers intrigued and encourage possible participants to contribute to this kaleidoscopic view. It also opens up new perspectives for non-wheelchair users, who have likely not seen the city from this point of view, and also have little idea about how inaccessible public space can be. Lutgendorff hopes that the platform will also serve as a policy tool, as public accessibility is currently being debated by Dutch politicians, and accessibility for wheelchair users in the Netherlands ranks among the worst in Europe. To fully exploit its potential, this student project needs further marketing and professional support.

WHEELSHARE, makes the environment of wheelchair users visible.
Wietske Lutgendorff, student, minor in Open Design

Fig.10. Wheelshare, *Wietske Lutgendorff*, *http://wheelshare.nl/over*

Fig.11. Wheelshare, *mounted on a wheelchair.*

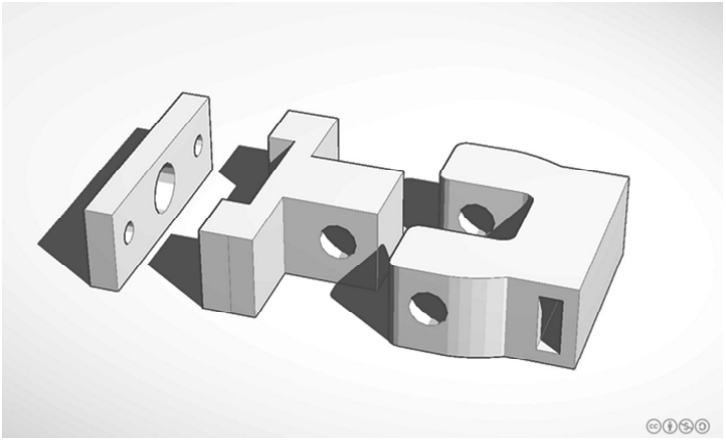

Fig.12. Wheelshare, *downloadable 3D print http://wheelshare.nl/downloads*

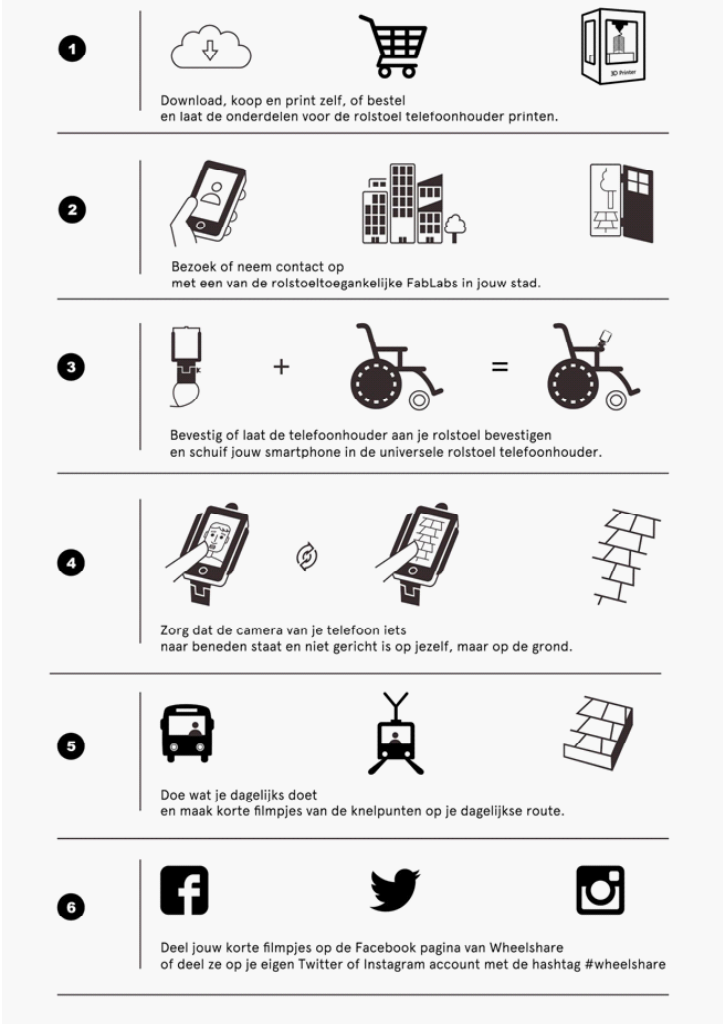

Fig.13. Wheelshare, *instructions*, *http://wheelshare.nl/start*

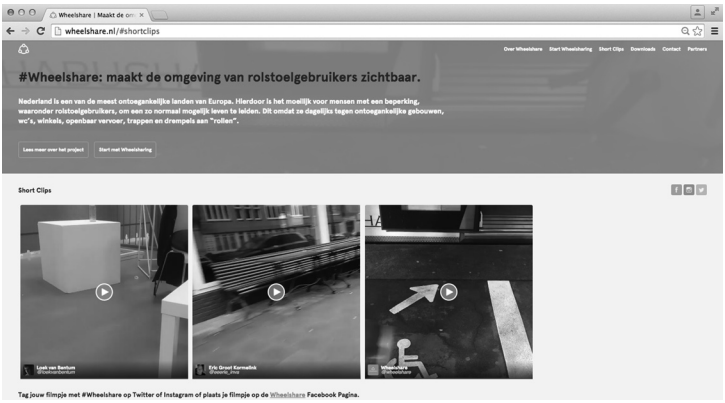

Fig.14. Wheelshare platform, *clips uploaded by wheelchair users http://wheelshare.nl/#shortclips*

With a nod to code sharing and platforms like GitHub, the students were also tasked with disseminating the key elements of the informal knowledge they obtained from their communities, resulting in an online publication entitled *A Collection and Compendium of Unusual Knowledge*.

CONCLUSION

In this paper we intended to question the supposed juxtaposition between the principles of open design (utilization, sharing, participation) and authorship (aesthetics). We contextualized the paradigm of "open authorship" and "open aesthetics" in relation to utilitarian appropriation by pointing out its as yet underexposed historical background: the debate about shared authorship (Diderot—De Condorcet) and the aesthetic tradition of open design—the open form (Eco, Wölfflin, Hansen, Raaijmakers), where it is aimed at "real" participation and contribution by stakeholders. From this perspective, we investigated "open authorship" in WdKA's Open Design Program.

The outcomes showed that different approaches to openness ensure diversity in the field, which, in turn, will secure a long future for open design. Various attitudes towards openness emerged and several kinds of open form aesthetics were explored. Some examples: a kaleidoscopic multi-user aesthetic that, through its visual language, invites wheelchair users to join, (Lutgendorff's *Wheelshare* video collection, Dirven's *Memory game*), unconventional ad-hoc, wabi-sabi language based upon expressions of specific communities (Swiers' "Frankenstein" sweaters, Degeling's cardboard and wire DIY synthesizer), the familiarity of daily waste (Van Delft's *Fairphone Case*), cultural prompts to activate memory and to open up personal stories (Idsinga's *Memre*) or provoking forms to challenge and involve people (Public Loom Confrontation Piece).

These new approaches to open authorship in design show that traditional concepts of authorship are slowly being opened up. In the

projects mentioned, authorship is expressed as an investigation of shared aesthetics connected to an iterative approach (as open source coders do), and to the user's needs (as practiced in participatory design). Exploring the social (community involvement), the technological (the use of networked platforms), and the "aesthetics of the unexpected", these open design students created projects of indeterminate duration and a new, participatory, and constantly evolving aesthetic.

Although the notion of artistic "genius" is still present in the conception, infrastructure, and first version of the design, the afterlife of the work remains uncertain for the author. Users are becoming new authors—as seen with *Layer Chair*—or are now even explicitly mentioned as co-authors—as with the *$50 Prosthesis Project*. These are examples of longer lasting open design projects, in which time has allowed them to further evolve within different (social and artistic) contexts without the "original creator". The case studies explored here represent a new generation of designers and we are confident that there is a strongly interdisciplinary future for open design.

REFERENCES

Abel, Bas van and Klaassen, Roel, ed. 2011. *Open Design Now*. Amsterdam: Waag, Premsela, BIS Publishers.

Abel, Bas van, 2011, "(Un)limited Design Contest. Experimenting with Open Design", in *Open Design Now*, edited by Bas van Abel and Roel Klaassen, Amsterdam: Waag, Premsela, BIS Publishers. Accessed December 28, 2015.
http://opendesignnow.org/index.php/case/unlimited-design-contest-bas-van-abel/

Avital, Michel, 2011, "The Generative Bedrock of Open Design", in *Open Design Now*, edited by Bas van Abel and Roel Klaassen, 48-58. Amsterdam: Waag, Premsela, BIS Publishers.

Björgvinsson, Erling. Pelle Ehn, Per-Anders Hillgren, *Design Things and Design Thinking: Contemporary Participatory Design Challenges*. In: Design*Issues*: Volume 28, Number 3, Summer 2012, p.102.

Bødker,S, Ehn, P, Sjøgren, D, Sundblad, Y. *Co-operative Design. Perspectives on 20 years with 'the Scandinavian IT Design Model*, 2000. Accessed January 4, 2016.
http://cid.nada.kth.se/pdf/cid_104.pdf

Breton, Andre, 1937. "Amour Fou." In *What is Surrealism? Selected Writings*, edited by Franklin Rosemont, p.162. New York: Monad Press.

Breton, Andre, 1927. "Exquisite Corpse". In *Surrealism*, Patrick Waldberg, 1965, p.95. New York, McGraw-Hill.

De Condorcet, "Fragments sur la Liberté de la Presse", 1776. In: Hesse, Carla, *The rise of intellectual property, 700 b.c.–a.d.2000: an idea in the balance*, p.35, Daedalus, Spring 2002.

Diderot, Denis, 1970. "Oeuvres Complètes, 15 Vols." In: Hesse, Carla, *The Rise of Intellectual Property, 700 b.c.–a.d.2000: An Idea in the balance*, p.34, Daedalus, Spring 2002.

Dyvik Design, 2012. "Dyvik, Jens, Layer Chair, 2012". Accessed January 5, 2016.
http://www.dyvikdesign.com/site/portfolio-jens/the-layer-chair-amsterdam-edition.html

Eco, Umberto, 1989, "The Poetics of the Open Work". In *The Open Work*. Harvard University Press, Cambridge, Massachusetts.

Ehn, Pelle, 1988. "Work-oriented Design of Computer artefacts, p.34. Accessed March 24, 2016.
http://www.diva-portal.org/smash/get/diva2:580037/fulltext02.pdf

Ehn, Pelle. 2008. "Participation in design things". In: *Proceedings of the Tenth Anniversary Conference on Participatory Design 2008* (PDC '08), p. 92-101. Indiana University, Indianapolis, IN, USA.

Fichte, Johan Gottlieb, 1791. "Proof of the Illegality of Reprinting: A Rationale and a Parable", 1791. In: Hesse, Carla, *The rise of intellectual property, 700 b.c.–a.d.2000: an idea in the balance*, p.35, Daedalus, Spring 2002.

Foucault, Michel, 2002. *The Order of Things: An Archaeology of the Human Sciences*. Psychology Press.

Hansen, Oskar, 1959."Forma Otwarta", In: *Przeglad Kulturalny, vol .5, no.5*, p.5.

Herst, Deanna (in collaboration with Waag Society), 2013. "Open design curriculum". Syllabus, Willem de Kooning Academy, Rotterdam University of Applied Sciences, Rotterdam, the Netherlands. Accessed March 23, 2016.
http://waag.org/en/project/open-design-minor-wdka

Hesse, Carla, 2002. *The Rise of Intellectual Property, 700 b.c.–a.d.2000: An Idea in the balance*, Daedalus, Spring 2002.

Kasprzak, Michelle & Deanna Herst, 2015. "Non-Expert Experts: A Collection and Compendium of Unusual Knowledge". Syllabus, Willem de Kooning Academy, Rotterdam University of Applied Sciences, Rotterdam, the Netherlands.

Kasprzak, Michelle, 2014. Lecture, "Blowup: Non-Expert Experts", Rotterdam, the Netherlands, 27 November 2014.

Leadbeater, Charles; Miller, Paul, 2004. *The Pro-Am Revolution: How Enthusiasts are Changing our Economy and Society*. London: Demos.

McCarthy, Steven, 1996. "What is "self-authored graphic design" anyway", poster/catalogue for Designer as Author: Voices and Visions. Kentucky, Northern Kentucky University.

Mulder, Arjen and Brouwer, Joke, ed. 2007. *Dick Raaymakers*. V2_publishing, Rotterdam.

Open Design Contest. Currently off-line. http://opendesigncontest.org/

Open Design WdKA https://opendesignwdka.wordpress.com/projecten/, Last accessed December 28, 2015

Open Design Now, 2011. "Open Design Now index". Accessed 22 December 2015. http://opendesignnow.org

Open Form Manifesto. Accessed January 7, 2016. http://open-form.blogspot.nl/2009/01/original-1959-open-form-manifesto.html

Studio Droog, "Design for Download", 2011. Accessed January 7, 2016. http://studio.droog.com/studio/all/design-for-download/

Translations\ 03, 2009. "Authorship in Design, November 20 –21 2009, MA graphic design, Gutenberg-Intermedia, Fachhochschule Mainz". Accessed January 4, 2016. http://www.translations-symposium.de/translations03

Ramakers, Renny, "Open Design, an Interesting but Tricky Concept", April 10, 2011. Accessed January 5, 2016. http://www.droog.com/news/2011/04/open-design-interesting-tricky-concept/

RepRap, 2007. Accessed January 3, 2016. http://reprap.org/wiki/Main_Page

Rock, Michael, 2004. "Graphic Authorship". Accessed January 7, 2016. http://www.typotheque.com/articles/graphic_authorship

Sanders, E, Brandt, E, Binder, T, 2010. "A Framework for Organizing the Tools and Techniques of Participatory Design", PDC 2010, November 29–December 3, 2010, Sydney, Australia.
Schaub, A. et al. 2015. "Affordable and Adjustable Prostheses Created in Fablabs". Accessed December 23, 2015. https://waag.org/sites/waag/files/public/Publicaties/Alex_schaub_article.pdf.

Troxler, P, 2015. "Beyond Consenting Nerds, Lateral Design Patterns for New Manufacturing", Rotterdam: Hogeschool Uitgeverij.

Wikipedia, 2006. "Open Design". Accessed December 22, 2015. https://en.wikipedia.org/wiki/Open_design

Wölfflin, Heinrich, Hottinger, Marie Donald Mackie, 1950. *Principles of Art History. the Problem of the Development of Style in Later Art*, p.124-125. New York: Dover.