

# Towards a Philosophy of Interaction Design

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**This paper focuses on the elements required for developing an interaction design framework based on Media Philosophy. For this purpose it is needed to de-construct the presuppositions of HCI design. Following this the author suggests a re-definition of design, knowing, that design funnels the functioning code, that supplies the society with values and goals, but most importantly, that creates relations, which bring us emotions and experiences. The author argues, that by discerning the most important values it is possible to develop an effective and meaningful design method, so as to bring into the interaction an added value. It is also argued, that the current idea of desktop computers is non-functional for most of the intended purposes. It is therefore suggested to make the computer invisible in our life-world. However, this presupposes making the purpose of the computer readily visible, e.g. hiding the computer in the shapes of things of daily use. This paper is based on the works of humanistic thinkers as well as practitioners from the interaction design domain to allow for a broader theoretical reflection not only of the way how computer devices operate, but above all how they act in a human environment.**

*Interaction, design, code, media philosophy, value.*

## 1. INTRODUCTION

The current fast-paced development of Information and Communication Technologies (ICT) is based mainly on technical professions, which lack a facility for a deeper reflection of ways and results of implementation of these technologies in the social context. The non-existence of this reflection might lead to creating ill-targeted, non-effective, difficult-to-use, and sometimes even dangerous applications. Therefore ever more often inter-field groups of specialists participate on the development of ICT, in companies as well as at universities.

This trend leads to incorporate experts from the humanities into the development teams. The main reason for it is the shift of emphasis from how something works *per se*, to why something works, or does not work. The research starts to focus on the meaning of technology products, the values they represent, and the type of experience they mediate. For this purpose it is needed to de-construct (and re-interpret) the point of departure of ICT design. The relevant field for such an analysis is the study of Human-Computer Interaction (HCI), or more generally, Interaction Design, which has been developed since the seventies of the previous century mainly in the U.S.A. and in the most advanced European countries.

This paper shall look on this field from the point of view of Media Philosophy, which in this perspective could be seen as undeservedly neglected. The reason for it is it can offer a very beneficial view based e.g. on the study of Semiotics, Hermeneutics, Sociology, Psychology, Phenomenology, Computer Science and Design. With its humanistic scope it is aimed at human values, and has a greatest chance to discern, which values play in the computer interaction an important role.

Such a view constantly roams between technology (computer system, technical products, etc.) and humans (technology users), and it is important for it to find and define contiguous surfaces between the two poles. By definition these surfaces are the interface. And the interface is the place, where mutual interaction takes place. On the side of the human this interface is represented by design (here mainly as shape or intention), on the side of the computer it is represented by code (here mainly as a set of rules).

### 1.1 Goals

The goal of this work is to contribute to the development of this field in our conditions and draft viable lines of future research. This work shall try to:

1. Show, how can we grasp theoretically this issue for further analysis;
2. Define the term "Interaction design" through the definitions of design, code, interaction. and value;
3. Suggest, how we could exploit the achieved conclusions in a further research of computer interaction based on Media philosophy.

**1.2 Hypothesis**

On the basis of the mentioned goals this work will try to prove the hypothesis, that the application of Media philosophy on the design of computer interfaces will constitute an added value, and will lead to a better computer interaction.

**2. CODE AND DESIGN**

The systems cannot set the rules of interaction centrally by themselves any longer, because the center is always set in another context than the interface, with which we work. Such a situation does not play well with meaningful interaction. It is therefore needed to decentralize the control, that's why the systems delegate their "governing privilege" on the protocol. By protocol we mean a set of rules for dealing with data and especially their formatting in electronical communication systems. The protocol governs how each type of code is to be dealt with. Mutual interaction thus presupposes the sharing of a common system of codes, controlled by a protocol.

It is clear, that such starting point will lead to an implosion of interactions based on binary codification (with what we can interact, and with what we cannot), and will follow just a rule of correct linking (in terms of syntactics), instead of a meaningful linking (in terms of semantics). There is a space in here, that has to be rectified by design. It will be a design of interaction, or interaction design: a design with which one can interact.

Following this the author suggests a re-definition of design. In contrast to the general understanding of design as something stable and static, design should be regarded as an open interactive structure governing its future lines of development. In this manner it mediates and organizes interpersonal relations. [1] It is a medium, therefore its sign component is important. Also because it, in the manner of signs, dilates space and/or time, thus manipulating them. We can segment design according to its polarities:

DESIGN	
active component	passive component
intention	shape
purpose	manner
Event [2]	Type [3]
Cast [4]	Casting [4]
pragmatics	syntactics

Table 1: Design polarities

On the other hand, the code builds a difference, supporting thus the emergence of information and the meaning of such information. Like design, code can be understood in two ways:

CODE (in general)	
code as a system [5,6]	code [5]
grammar	rule
paradigm	protocol
language	medium (of system evolution) [7]
program	binary code [8]

Table 2: The meaning of code

Design evolves through the interaction with our predecessors, thus shaping the past, then with our fellow-men, thus in-forming the presence, and then into the future referring to our followers. [3] This evolution takes place in the material world of things as well as in the immaterial world, in the environment of non-things. [6] It begins with information, and ends with de-formation. During its life-span design acquires different informations and values according to its involvement in various events and discourses, thus entering the language domain.

The intention of design is to in-form. [6] The result of this process is information, bearing a certain value. The value is born by mutual interaction of pragmatics, semantics, and social world. [9,10] In this way design stands behind the forms, thus being rather something invisible. In order to be effective, it must paradoxically make itself visible.

If it is really possible to create an intuitive interface for ICT, then this can be regarded as one of the ways. The goal won't be to transfer metaphors into the immaterial world of computers, but making the technology "invisible" in the life-world. E.g. technical artifacts are produced such as jewells, that exponentiate our experience through enchantment and deepness. [11] There begins a shift from thinking to experience, from graphical aesthetics (and graphical interfaces) towards tangible aesthetics (and tangible interfaces, Figure 1). It is made possible also thanks to the fact, that "when we look at an object, we grasp it." [12: 19] In perceiving something we experience the materiality of the perceived (seen) through thinking.



**FIGURE 1:** Reactive Tables by Hernando Barragán [13]

A crucial point for the design of digital environments is its ability to induce a certain type of experience, to build a certain world. Such a world should come out of our daily life experiences and should allow for a common sense interpretation of itself as much as possible. [14] This is a pre-requisite for a functional and effective design of user interfaces. It must not, on the other hand, replicate the life-world metaphors in the "virtual" world, but rather hide the computing technology in the lifeworld. The shift taking place in here is one from thinking and appearance towards expertise and experience. The virtual reach of our actions changes, as well as the register of events starting these actions. And, of course, aesthetics thanks to its effect on thinking can induce such experiences. [12]

### **3. STATUS QUO**

The typical and well-known case of interaction design is the computer desktop (Figure 2). Since 1984, when Apple Macintosh was introduced, it hasn't changed much. When interpreted from a semiotic point of view, the most common signs are icons, because the GUI tries to mimic the human experience from the real world as much as possible. However, as the operating system works on a different basis, such approach becomes questionable in numerous cases. [15] The interpretation of the system work can be hindered, because we are acting just on an "as-if" level, already interpreted by the designer. This could be a semiotical contribution: to find a more adequate representation of the operating systems on their interface with humans.

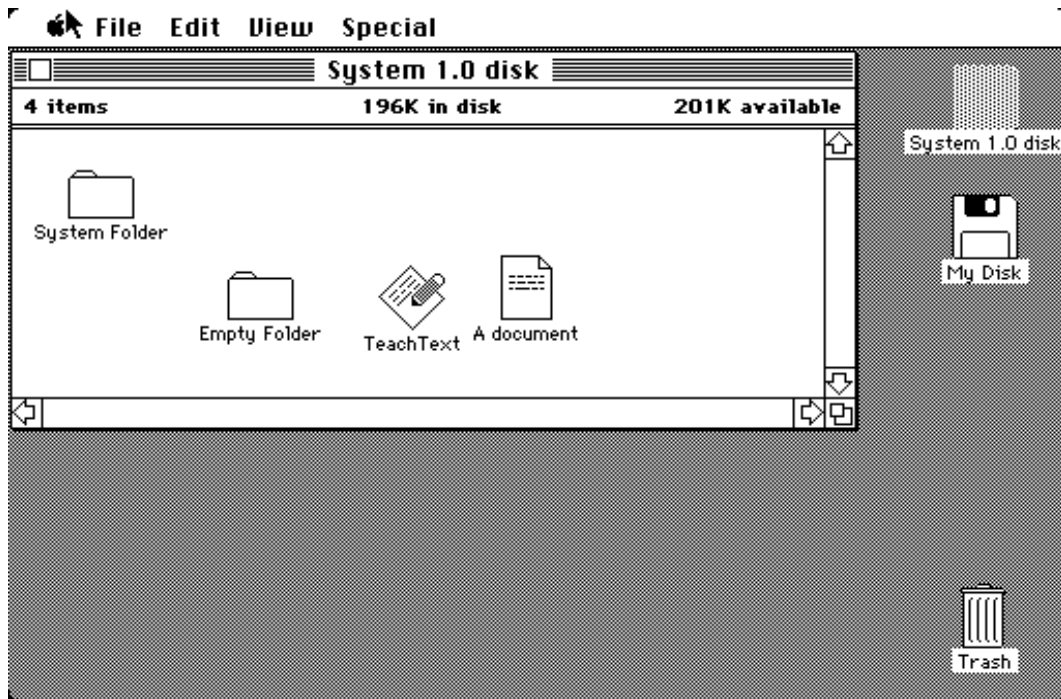


FIGURE 2: MacOS 1.0

#### 4. THEORY OF INTERACTION

The beginning of interaction starts by detecting objects of interaction (e.g. files on the disk) in our perception field (e.g. seen on the screen). It is essential to recognize the objects as such. This has been widely supported by representing the objects through metaphors. [16] However, metaphors are seen ever more as ineffective and misleading, because they bring into the interaction a burden of unnecessary domains. [17] A better way of design presents the construction of interfaces on the basis of meta-language, that can better describe, what are we doing, and what are we to do. Our intended goal starts a new language-game, which will exhibit itself through a result, generally by changing the attributes of an object. The interface itself makes its way into being with an interplay of before-given objects and user effecting on them. [15]

The rules governing this action effect are paradigmatic, i.e. they define a set of actions available at a given moment for a given object. These actions are implicit (if they come out directly from the context of the object) or explicit (if they need to emphasize, e.g. through a menu). [18] The paradigm should be as free as possible, in order not to confine the user in a set trajectory of actions, but at the same time it should support the most common patterns of action (e.g. by offering to run a most often used set of actions).

Every language-game is triggered by an event, [2] which is language- or computer-based. The former event uncovers usable objects (ready-to-hand), the latter changes the objects according to a program. Both the events are interconnected on the interface. The event occurs due to the objects on the scene. Objects are intersubjective media, creating relations between subjects and mediating their dialogue. [6]

The paradigms can be divided into language- or task-motivated. [15] The former follows the language-games, the latter the system functions. I.e. which actions we carry on in the system, how we interpret them, and how we talk about them. A common ground for comparing them is supplied by semantic fields. [15,19] The fields can also compare the domains of the designer and the user, which leads to creating a more intelligible interface. The solution here can be to use the work language as a starting point for creating new computer-based signs. [15]

Every interface presupposes a certain context of use (a paradigm), but not always makes this supposition clear. They show us just what we are supposed to see. The interface (a syntagm) stands therefore on an ideology. It determines the relations that can be made. Insofar as these relations are social (and influence thus the tradition and future evolution), they are also political. This is the reason why we should de-construct the existent interfaces and uncover their design, before we can attempt at creating new interfaces.

The system design propagates itself into three levels: physical (visceral), psychological (behavioral) and social (reflective). [20,7] Each one affects a different level of the human being. These categories can be used for an analysis of the reason why something works or doesn't work in the social context. Shortly, we deal here with (un)attractivity, (non)functionality, and (un)interesting values.

#### 5. DISCUSSION, CONCLUSION

This work has tried to show, how the life of our society is based on a code, that determines it, often without its awareness. This unreflected and unconscious code can be regarded as fate. However, as Flusser pointed out, design means fate. What does this point to? A possible answer would be, that the function of design is to disclose this fate and give it a shape. Design determines directly the quality of our life by funnelling the functioning code, that supplies the society with values and goals, but most importantly, that creates relations, which bring us

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emotions and experiences. Fate is then something, that encompasses the human being-in-the-world, and melts on its horizon design and code as two sides of the same coin.

The author intended to support the hypothesis, that Media Philosophy is able not only to view interaction design from a different perspective, but also to develop it in an effective and meaningful way, so as to bring into the interaction an added value.

The values we have discerned, are:

- Ethical value: the system design follows the intention of the creator, when it creates social relations according to a protocol with emphasis on effectivity;
- Instrumental value: how the goals of usability, effectivity, entertainment, etc. are achieved;
- Meaning value: what does the product mean, how is this meaning presented, and how is the meaning manipulated;
- Communicative value: how the system influences the content of the message and the interpersonal communication.

This work tried also to draft a possible development, that due to the evolution of technology enables us to overcome the prevalent idea of the “computer-with-monitor set-up” (which the author thinks is nonfunctional for most of the intended purposes) and make the computer invisible in our life-world. However, this presupposes the purpose of the computer (its design) to become readily visible (perceivable), e.g. through the things of our daily use. This is also a line coming from the school of direct manipulation, [18] which dominates current interfaces.

### 5.1 Future work

A logical continuation of this work would consist of building-up a "code of design", i.e. a summary of rules, instructions and methods for the design of interfaces: a code that would base itself on the principles of computer interaction, and could ensure the meaningfulness and security of such interactions. This code would then be applied to a concrete design project.

Such a code would allow for creating a structure, that will:

- Minimize in a given context and time the number of used objects (and processes) to show their relations and purpose (in terms of pragmatics),
- Enable a timely and full feedback about the achieved effect, and an evaluation of such feedback,

so as to be able to use these findings in the creation or re-design of system elements and their relations.

It is therefore needed to establish a method for mapping everything, that makes up a domain of interaction. Such a map would [21]:

- List the patterns of action,
- Connect the linguistic structure with the structure of the software supporting the given actions, and
- Set a base for measuring the effectivity of the implementation.

In short, we need to establish a theoretical base for observing not only how the devices operate, but above all how they act in a human environment.

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