

# FROM ARTEFACTS TO INTERFACES: GUI BONSIEPE AND THE RE-DEFINITION OF INDUSTRIAL DESIGN, C. 1970

By Roland Meyer

*“Thus, not only the Opsroom, but also the dosing mechanism of a sowing machine could now be understood as an interface: it had to be readable and understandable, it had to convey a sense of the possible uses of the machine and provide access to its operative resources, and in doing so, it structured a common sphere of communication and interaction between people and their artefacts.”*

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A comprehensive conceptual history of the notion of the interface, tracing the transdisciplinary itineraries of the term between such diverse fields as fluid dynamics,<sup>1</sup> cybernetics and computer science,<sup>2</sup> media and communication studies,<sup>3</sup> architectural and design theory,<sup>4</sup> remains to be written. In such a history, the years around 1970 would mark a decisive threshold moment. Not only are the late sixties and early seventies a time of intensive research into Human-Computer Interaction, the development of the first Graphical User Interfaces (GUI) and the beginnings of personal computing. Around 1970, the concept of the interface also begins to enter the field of design theory, and, as I would like to argue in the following, it is there where some of its implications regarding the transformation from an industrial to post-industrial society are most clearly spelt out. By adopting the concept of the "interface", design theory accompanied, in part even anticipated a more general economic shift from a mode of production centered around physical artifacts to one increasingly concerned with pro-

cesses of signification and communication.<sup>5</sup>

Given the trajectory of this transformation and the hyper-capitalistic dynamic it has fueled in recent decades, it is not without irony that the first time the notion of the interface is put at the center of design theory is on the pages of a book promising the transition to socialism: *Design im Übergang zum Sozialismus*, written by German industrial designer and theoretician Gui Bonsiepe and published in 1974 as the programmatic first volume of a newly launched book series on *Design Theory*.<sup>6</sup> Herein Bonsiepe, who was trained at the Hochschule für Gestaltung (HfG) Ulm, recounts his recent experiences in Chile, which he had to leave after the military coup of September 11, 1973. The book tries to develop a theoretical framework which encompasses the variety of design projects he and his collaborators had pursued in the previous years, from consumer technology to agricultural machines and new forms of data visualisation. With introducing the term *interface* to cover these diverse fields, Bonsiepe, as I would like to show, not only defines a new field of activity for designers but rather sets in motion a more fundamental redefinition of industrial design and its role within society. What follows, then, is a spotlight on

1 On the origination of the term in fluid dynamics, see Branden Hookway, *Interface* (Cambridge, MA/London 2014), pp. 59–119.

2 On the history of the concept in computer science, see Hans Dieter Hellige, Krisen- und Innovationsphasen in der Mensch-Computer-Interaktion, in: *Mensch-Computer-Interface. Zur Geschichte und Zukunft der Computerbedienung*, ed. Hans Dieter Hellige (Bielefeld 2008), pp. 11–92.

3 For a comprehensive overview of the debate in media studies, see Jan Distelmeyer, *Machtzeichen. Anordnungen des Computers* (Berlin 2017), pp. 22–35.

4 For a design historical approach to the notion of the interface, see John Harwood, *The Interface: IBM and the Transformation of Corporate Design 1945–1976* (Minneapolis/London 2011).

5 On the notion of the post-industrial society, see Timo Kaerlein's essay in this issue.

6 Gui Bonsiepe, Design im Übergang zum Sozialismus. Ein technisch-politischer Erfahrungsbericht aus dem Chile der Unidad Popular (1971–73), in: *Designtheorie. Beiträge zur Entwicklung von Theorie und Praxis des Industrial Design*, Bd. 1, eds. Bernhard E. Bürdek et al. (Hamburg 1974).



Cybersyn operation room. Source: Gui Bonsiepe, *Del archipiélago de proyectos : diseño industrial en Chile 1971–1973* (La Plata: Nodal – Nodo Diseño América Latina, 2016).

nalised factories throughout the Andean state were supposed to be sent to the capital where they would be automatically collected and electronically processed. Visualised and displayed at the various screens of the opsroom, these data, together with statistical models and computer simulations, should allow a group of planners assembled in the operations room to grasp the current economic situation in real-time and to react accordingly towards impending crises.<sup>8</sup>

7 Bonsiepe, *Design im Übergang zum Sozialismus*, pp. 13, 206f. See also Bonsiepe's later description of the project in: *Entwurfskultur und Gesellschaft. Gestaltung zwischen Zentrum und Peripherie* (Basel, Boston and Berlin 2009), pp. 35–62.

8 Cf. Eden Medina, *Cybernetic Revolutionaries. Technology and*

collective access to these data visualisations and to foster rapid decision-making processes. The interface, thus, here appears as a semiotic-material hybrid: a non-verbal language translating processes and entities that elude immediate perception into visually apprehensible and symbolically readable symbols, as well as a media environment, a spatial apparatus that establishes new relations between human bodies and media technologies and enables the effective manipulation of these symbols.

*Politics in Allende's Chile* (Cambridge, MA and London 2011).

9 Bonsiepe, *Design im Übergang zum Sozialismus*, p. 206.

10 Ibid.

For Bonsiepe, though, the concept of the interface was not limited to data processing systems. Rather, he used it as a theoretical tool in order to redefine the scope of industrial design as a discipline: "Industrial design does not deal with the entire universe of industrial artefacts, but only with those with which man enters into a direct operative and/or perceptive relationship, i.e. products of the class of 'interfaces'."<sup>11</sup> From today's point of view, such a statement may seem surprising, since most of the designs presented in the book, for example those for agricultural machines or kitchen utensils, hardly qualify as "products of the class of 'interfaces'". But what was it that constituted these "industrial artefacts" as "interfaces" in Bonsiepe's view?

Bonsiepe has reformulated and expanded his theory of interfaces in the 1990s,<sup>12</sup> but its core idea was already present in the 1974 formulation cited above: Instead of reducing the task of the designer to aesthetic form-giving of technically engineered and industrially mass-produced artefacts, in his view the design process should focus on the "relationships" between people and objects. Industrial design, in this perspective, acts in the *in-between*, devising the intermediate, both material as well as semiotic layers necessary to provide human subjects access to the increasingly complex world of technical artefacts they live in.

Thus, not only the *Opsroom*, but also

the dosing mechanism of a sowing machine could now be understood as an interface: it had to be readable and understandable, it had to convey a sense of the possible uses of the machine and provide access to its operative resources, and in doing so, it structured a common sphere of communication and interaction between people and their artefacts. By becoming a designer of interfaces, the industrial designer thus ceases to be preoccupied with the mere aesthetic form of the artefact, and rather begins to design new forms of access and use.<sup>13</sup>

By introducing the notion of the interface into design theory, Bonsiepe deliberately broke with a (late) modernist conception of design very much centered around the notions of *form* and *function*.<sup>14</sup> Especially in post-war Western Germany, the ideal of industrial design was considered to be what Max Bill, the first rector of the HfG Ulm, famously coined "Die gute Form" (*the good form*).<sup>15</sup> The designer, in Bill's view, was responsible to give every artefact, "from spoon to city", its definitive, appropriate form, both practical and beautiful, reflective of its function and in accordance with the eternal laws of aesthetics. For Bill, this was nothing less than a profoundly ethical task, whose ultimate goal was to bring "civilisation" and "culture" into "harmony".<sup>16</sup> Whereas the "good form"

11 Ibid., p. 39.

12 Gui Bonsiepe, *Interface. Design neu begreifen* (Mannheim 1996).

13 Ibid., p. 20.

14 Bonsiepe, *Entwurfskultur und Gesellschaft*, p. 155.

15 Max Bill, *Die gute Form: 6 Jahre Auszeichnung "Die gute Form" an der Schweizer Mustermesse in Basel* (Winterthur 1957).

16 Paul Betts, *The Authority of Everyday Objects. A Cultural His-*

aimed at an organic unity of form and function, realised in the single artefact and visible in its physical appearance, Bonsiepe's concept of industrial design as interface neither begins nor ends with the isolated artefact, but encompasses the whole network of material as well as symbolical relations which it is part of. Rather than just aesthetically expressing the already determined function of a given technical artefact, the interface opens up a new space of possible uses and functionalities, thus undermining every attempt to distinguish between form and function in the first place.

Bonsiepe's redefinition of industrial design can be seen as the conclusion of a debate that had been going on in German design discourse since the late 1950s. At the HfG Ulm, where Bonsiepe first studied and later taught, the role of the designer in the process of industrial production was intensely debated, not least out of a fear that it was becoming increasingly marginalised. In the affluent German consumer society of the "Wirtschaftswunder" era, the role of industrial design threatened to sink into a mere superficial aestheticisation, the role of the designer being reduced to adding surplus exchange value to otherwise exchangeable products. Bill's "good form" was initially presented as an antidote to this process, as it gave German designers an ethical ideal that could clearly be put forward against the commercial "styling" primarily identified with commercial

American industrial design.<sup>17</sup> But during the 1960s, it became more and more clear that the question of the "good form" now definitely belonged to a bygone era of industrial production.

One of the first to notice this was Swiss sociologist and design theorist Lucius Burckhardt. In several articles in the late sixties, Burckhardt pointed out that recent technological developments had made the ideals of modernist design more or less obsolete. Pliers and coffee pots, Burckhardt wrote ironically in 1967, could perhaps still be designed in correspondence to the modernist ideals – but in the era of transistors, more and more artefacts structurally eluded any attempt to reconcile their visible form und their technical function. A tin box full of wires, transistors and batteries, Burckhardt writes, could just as easily be a musical instrument as a calculating machine. In these and other cases, no longer the visible "appearance" of elements, but their "invisible" organisation determines their function – which in turn is conveyed to the user solely via external control elements: "Because of the buttons we have to press, we know what kind of apparatus it is, and if we don't know these buttons [...], if they don't tell us anything, then this apparatus remains alien and useless to us."<sup>18</sup>

Rather than giving an aesthetic form to an already determined function, de-

17 Ibid., pp. 139–177, esp. p. 152.

18 Lucius Burckhardt, *Bauen. Ein Prozess ohne Denkmalspflichten* (1967), in: Lucius Burckhardt, *Wer plant die Planung? Architektur, Politik und Mensch*, eds. Jesko Fezer and Martin Schmitz (Kassel 2004), pp. 26–45, here p. 43.

*tory of West German Industrial Design* (Berkeley, Los Angeles and London 2004), p. 154.

sign here defines and enables possible uses, by providing symbolic means of communication, material devices of manipulation, and establishing a perceptive and operative relationship between a human subject and a technical artefact. Although he does not use the term interface, what Burckhardt describes is not unlike what Bonsiepe will conceptualise a few years later: the replacement of design as an art of form-giving by design understood as a practice of mediation and communication.

Around 1970, in an increasingly complex world, determined by immaterial structures and invisible processes rather than material forms and visible appearances, design could take on a new role which would go beyond the mere styling of surfaces. Rather than just increasing the commercial exchange value of mass-produced artefacts, it could now set itself the task of generating new use value by focusing on the interface between the everyday environment of the user and a sphere of technical artefacts whose functional dimension increasingly eluded sensual experience. In stark contrast to Bonsiepe's revolutionary dreams of the seventies though, this redefinition of industrial design hardly made it into a weapon of political liberation and the overcoming of cultural, technological and economic dependencies.<sup>19</sup> In retrospect, one could argue, the shift of design theory from artefacts to interfaces rather paralleled and even anticipated a more general economic transformati-

on in late-capitalist societies, where the main site of value production also began to shift from the factory to the logistics, advertisement, service, communication and financial departments – thus, exactly those sites where new relationships between commodities and their consumers, in a certain sense: new interfaces, were being designed and established.

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<sup>19</sup> Bonsiepe, *Design im Übergang zum Sozialismus*, p. 13.

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