The Usefulness of Imperfect Design

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Introduction

We, the authors, have been probing the state of the gesture of care for nearly a decade, and we staged our first international symposium to begin a process of re-formulating the conceptual basis of Care from the point of view of design in Copenhagen in 2015. A few years and events later the first "Does Design Care…?" workshop at Imagination Lancaster in 2017 asked participants to respond to what we had identified as 10 problems with care including - What might a theory of care look and feel like? How can care be made more explicit? How do we get to better care and what will it be like? Is inconsistent, unpredictable and ever-changing care desirable? How do we create attractive personalised and customised care? Since then, the concept of 'care' has become very popular with a booming literature very little of which sees any problems associated with care other than the need for more of it.

In addition to the ten problems with care we started with, the first "Does Design Care…?" workshop produced some problems with the problems. We wondered whether it was worth asking how much care, in particular health and social care, is just opportunistic. It is not enough for me to care – the other must need care. So, people appearing to need care are perfect, soft targets for something that we design and call care, *i.e.,* something easily imitating care. We also wonder what is the attraction for design to want to get into bed with health and social care when the invisible gesture of care is so complex - care is always care of the other, care for the other, care to be cared for by the other, care for what the other cares for.

And when an emerging platform we could call design and care comes into existence why do all the anecdotes paraded as design solutions appear to validate the design actions, especially when anecdotes never have currency in the disciplines? We could see why it was attractive to equate care with historic misconceptions of utopia because mixing design with care reprises the unfictionable ideals of design. But why does design need the increasingly popular 'fictions' to approach care? Does that make care a fiction? The trickiest issue for us was the carefully circumvented question of how design can avoid getting entangled in care's transactional platform? Was care simply another opportunity for design in its pact with capital? With the maturing of the service economy eventually people just wanted to be served so with the rapid rise and maturing of the caring economy is it probable that people will just want to be cared for? If so, this is perfect for the business of care but what about the design of care? Keep in mind that service design is largely just transactional affairs sold under the guise of friendship (Rodgers and Bremner, 2018). Also, can design distinguish between interactional care and transactional care? The former is a basic gesture most of us engage in instinctively while the latter is an uncharitable trick of the Capital project.

It would appear that at first all of the design proceedings pushing the issue of care are confronting basic questions such as what do we mean when we speak of care, and what do we mean when we think care? But it is now appearing to be easier for conferences and authors to sidestep these basic questions and leap straight to the managerial 'case-study' model. We were still interested in where we locate care (as gesture) or where we

locate the idea of care (as value)? Does care initiate a process of production (*e.g.,* via gestures)? Or do our habitual actions produce care (*i.e.,* is care an end product or by-product)? Perhaps the most troubling question for design is whether design is attempting to give care agency or turn care into an agent, and as such, the relational design/product/service par excellence?

What made us even more suspicious was design's sudden predilection to chronicle its actions – its case studies and anecdotes - as acts of empathy, which prompted us to ask – what was design doing before it discovered empathy? But is design aware that empathy makes designers imagine they are people they are not (Solnit, 2015) and that "*…empathy is, in a word, selfish…is biased…is short sighted*" (Serpell, 2019).

Almost all of the above questions were answered in a matter of months – specifically the months from January 1st to May 31st 2020 – the period during which we collected design responses in the form of products, systems, graphics, shelters, networks, and direct action to the COVID-19 pandemic. As the projects rapidly accumulated from all corners of the globe, we analysed and assembled them into a book that we published soon after (Rodgers *et al.*, 2020). This chapter tells the story of this work and the resulting book – "*A Design History of the COVID-19 Virus*".

We documented hundreds of projects many of which might have saved lives. All were produced as quickly as possible with designed outcomes getting more and more rudimentary – imperfection was irrelevant. Use was king. Lifesaving designs, absolutely essential and useful but all imperfect. Perfection would have been deathly! But long before we witnessed this absolute utility of imperfection in hundreds of design responses to the COVID-19 pandemic, Andrea Branzi wrote in his "Introduction to Italian Design" (2008) that imperfection had already superseded perfection as the archetype of design:

"*The activity of innovation, which today design is called to respond to, follows strategies completely different from those past, committed to realising definitive products, that is industrial archetypes destined for large numbers to mass markets, and exemplified by great elegance by our masters. It is the opposite today… One must point to individualised models "reversible, provisional, perfectible" that leave large margins for future action, market adjustment, but also the advent of new market spaces. One isn't dealing only with updating product aesthetics, but to individualise dynamic devices that will never reach a definitive equilibrium. Paradoxically, perfection creates rigidity, fragility and the risk of precocious aging of the brand.*" (Branzi, 2008, p. 190)

Similarly, David Pye the well-known architect, industrial designer and wood craftsman who also worked on the theory of design and workmanship spoke widely on imperfection in design stating:

"*Nothing we design or make ever really works. Never do we achieve a satisfactory performance. Things simply are not 'fit for their purpose'. Everything we design and make is an improvisation, a lash-up, something inept and provisional.*" (Pye, 1978, p. 13-14)

Also, in 'Towards Relational Design' (2008), Andrew Blauvelt proposed that we are moving towards a type of design that is relationally based and contextually specific. In his account, he structures the evolution of design into three main epochs: modern design, post-modern design and relational design. Modern design ranges from 1900 to 1950, and focused on *forms*, which were disseminated rationally and potentially universally. Post-modern design ranged from 1960 to 2000, and focused on design's *meaning-making* potential, symbolic value, semantic dimension and narrative potential.

Finally, relational design ranges from 2000 to the present, and focuses on effects on users, pragmatic and programmatic constraints, rhetorical impact, and the ability to facilitate social interactions. He presents IDEO and Anthony Dunne and Fiona Raby as primary practitioners in this new evolution. In his account, he describes relational design as including performative, pragmatic, programmatic, process-oriented, open-ended, experiential and participatory elements, moving away from designing discrete objects "*...to the creation of systems and more open-ended frameworks for engagement: designs for making designs*" (Blauvelt, 2008). With the COVID-19 crisis we might argue for a fourth wave of design based on events.

If the first wave of design offered us a multiplicity of forms, the second a multiplicity of meanings and interpretations, and the third wave presented a multiplicity of contingent, boundaried or conditional solutions: open-ended rather than closed systems; real-world constraints and contexts over idealised utopias; relational connections instead of reflexive imbrication; "*...the end of discrete objects, hermetic meanings, and the beginning of connected ecologies*" (Blauvelt, 2008, p.6). The fourth wave seems to present trust as a fundamental element to design: unsupervised versus supervised systems; unintended consequences versus control; readiness versus perfection, care versus profit; resilience versus comfort; not-fully-knowing versus fully-knowing; reparation and accountability versus empathy, and the ubiquity of fluid cyber-blended and hyper-connected inter-dependent ecologies.

The relationship between the imperfect and trust is being played out in the development of the vaccines. Every vaccine was developed in the 'just-in-time' method with each in varying degrees imperfect but imperfect just enough to be able to be customised to combat the coming virus variations. However, it appears that this same useful (by design) imperfection is making it difficult to convince everyone to put their trust in a vaccine's efficacy.

What We Did
In our book – *A Design History of the COVID-19 Virus* – we documented the COVID-19 crisis as it evolved every day from the 1st of January 2020 to 31st May 2020. This temporal span encompassed; the outbreak; the first lockdown and reopening. We looked at all of this care and caring from the point of view of design and, by the sheer volume of design interventions we have documented, illustrate that design really does care.

What the COVID-19 pandemic has illustrated is that for the first time in modern history capital was totally irrelevant. Money could not save your life[1]. Only design could. Rapidly

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[1] The Reviewer of our initial draft of this chapter commented on this sentence saying: *What the Covid-19 pandemic has illustrated is that for the first time in modern history capital was totally irrelevant. Money could not save your life* (p.30) "seems out of touch with the massive inequalities that were exposed during the pandemic. Those who could afford to stay home did and those in 'essential' jobs that could not be performed remotely still had to work in order to make ends meet, potentially exposing them to the virus. Many of the positions that were still active in-person, even during the height of lockdown, included working class or low-paying jobs in the service sector. Therefore, monetary and class privilege did have an impact on how safe individuals were from the virus. Further, it is possible, and important, to both emphasise how vital pandemic designs of high use-value were during the crisis, while acknowledging the ways in which designs of high use-value, such as masks and Covid tests, were still generated for profit."

In our response, we state that from our perspective the reviewer's comment above states the obvious but misses our point. It was well known before any pandemic that money would determine risk. We are making the case that at the outbreak of the pandemic it was immediately

designed masks, shelters, hospitals, instructional posters, infographics, dashboards, respirators, sanitisers, virtual and local communities emerged to save us. From 1st January 2020, design became king. The COVID-19 global pandemic presented an ontological reality; design is more than margins or profit. In fact, design became extremely valuable when it stopped concentrating on those things and started to care about peoples' lives. This brief episode in history is repositioning the status of design and reconfiguring its signifier from consumption to care.

Given the very peculiar COVID-19 circumstances, to assemble our book – *A Design History of the COVID-19 Virus* – we simply collected everything as a type of diary entry form of data collection. We saw it as the best possible method to gather the collected experience of the material culture, body of experience, skill and understanding embodied in the arts of planning, inventing, making and doing related to the event. Also, the infinite array of digital tools enabled us to collect the interventions from our desks. In this context, photos, videos and text were collected using a variety of online apps and tools that allowed us to collect the design interventions dealing with an unexpected event. Here we are not investigating how people changed over time, but how practice, in this case design, adapted through time and circumstances to address readiness, appropriateness and preparedness.

In the development of our book, we adopted what could be objectively characterized as an elicitation perspective. This consisted of capturing media as soon as the phenomenon occurs to record examples of pandemic design as soon as they were found in the digital landscape. By assembling the cases in chronological order, the book functions as a history of the COVID-19 pandemic design interventions. It is a "research-in-the-moment project" where we illustrated our thoughts and insights in tables, charts and diagrams. We accepted all design interventions as valid and gave them the same role and status by presenting each on a single page. No curation. No selection. No position. Figure 1 shows an example of the information we collected in each design intervention case.

TITLE	COVID-19 CORONAVIRUS MAP: GLOBAL OUTBREAKDASHBOARD
AUTHOR	THE NEW YORK TIMES
PUBLISHED	2020-01-28T22:57:20.000Z
URL	https://www.nytimes.com/interactive/2020/world/coronavirus-maps.html
KEYWORDS	days, reported, outbreak, rate, global, countries, average, jan, coronavirus, map, deaths, cases, tracking
DESCRIPTION	The virus has infected more than 2,843,000 people in at least 177 countries.
COUNTRY	USA

Figure 1. Design Intervention Data Collection Example

In order to frame the intended outcome, a progressive and systematic integrative review was conducted. We decided to use this approach to insert flexibility into the cataloguing of the event. The search criteria were articulated based on their relevance to the subject. Design blogs, and specialist websites were searched daily. These online sources

apparent that despite the rhetoric of preparedness all pandemic planning was in fact a mirage - no country was prepared, no 'equipment' was stockpiled and no communication strategies were in place. Nothing was available to those who needed it. Therefore literally, money could not buy what did not exist. Only by improvising immediately did design do what money couldn't – save lives.

articulated the views of relevant and amateur practitioners. We also included reports from news platforms to complement and expand data collection to insert a broader and more inclusive and representative perspective. The criterion for inclusion was the relevance to the practice of design.

The selection was conditioned by our searches; therefore, it was somewhat arbitrary. The design cases collected in our book represent a sample of data of the event. The date represented in the cases is an estimation. Online tools such as scraping data tools were used to determine the date of publication. However, as the tool in itself claims, it is just an estimation. In cases where we could not determine the date, we used the day it was encountered. We were not interested in documenting what happened with exactitude; this job belongs to sociologists and anthropologists. Rather, we were interested in documenting a sample of data to extract high patterns of knowledge to build "*knowledge for future actions*" (Glanville, 2015).

Figure 2 shows an example page from our book highlighting one of the 500+ design interventions we have assembled as part of this ongoing work[2]. The 500+ design interventions were collected over a period of 152 days.

In this process, as Figure 2 illustrates, 63 different types of design intervention were collected from 54 countries. There are 6 main *categories* of design intervention (Figure 2 top left) – Actions, Graphics, Networks, Products, Shelters, and Systems; 24 *sub-categories*, and 8 *enablers* (*i.e.*, who has supported the creation of the intervention – Independent, Private, Government, University, Citizens, Consortium, NGO, Professional Association). The example also shows further information – *country of origin*, *type of intervention* (*e.g.*, mask, robot, mechanism, wearable, shield, test, etc.), *author*, *definition*, *source of information*, the *main image*, and the *intervention title* at the bottom of the figure.

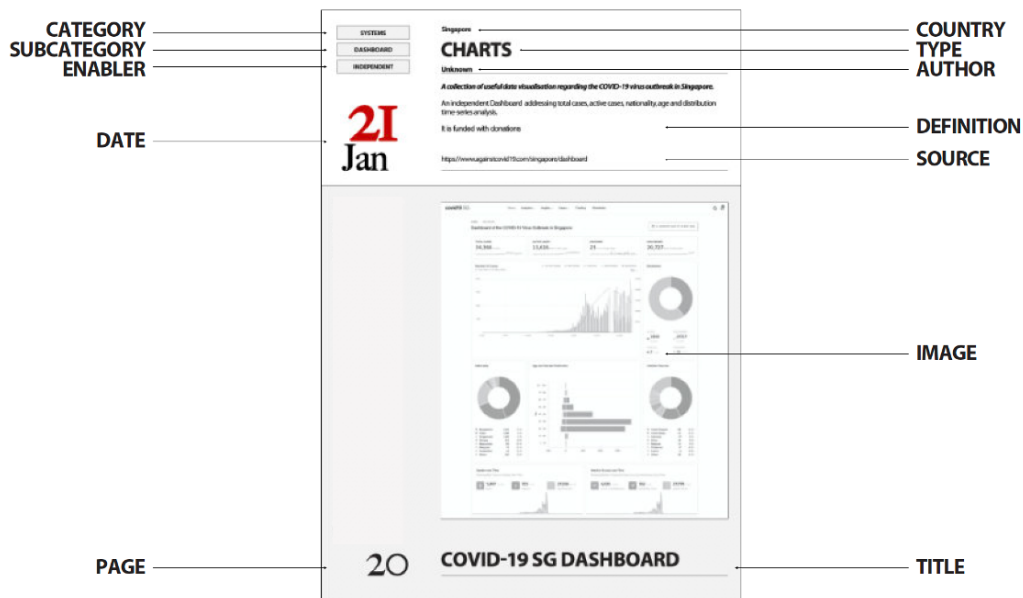*Figure 2. Design Intervention Page Example*

In total we collected 500 cases, during 152 days, from 54 different countries. As we assembled the cases we identified 6 main categories, 24 subcategories, 63 types of embodiments and 6 types of enablers, which we illustrate in Figure 3 below.
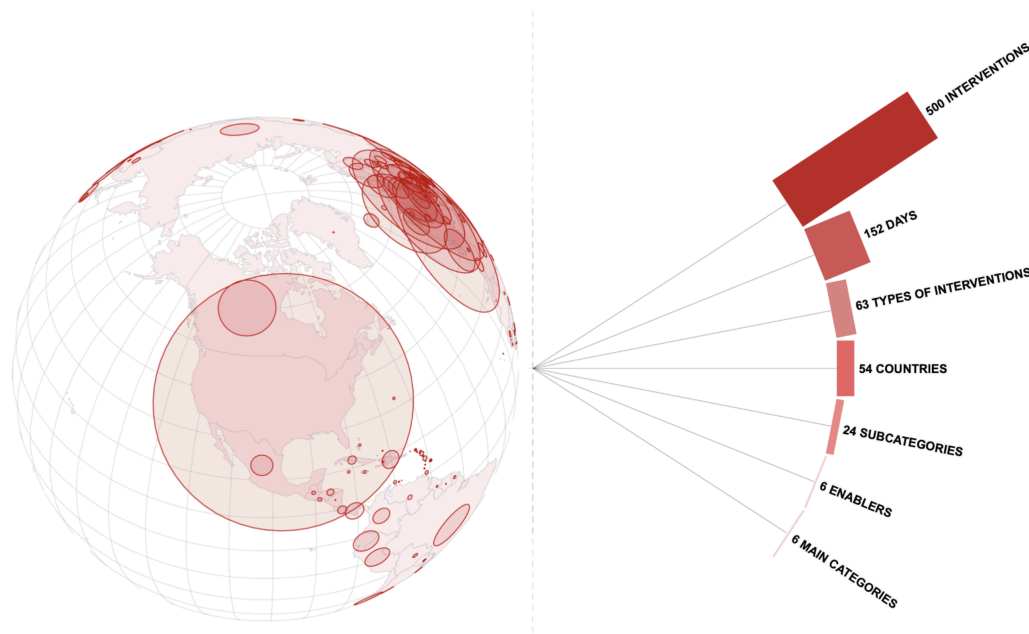

Figure 3. Design Intervention Data Highlights

The 500 cases operated as a sizable sample of data from which to extract patterns of activity. The classification of the interventions into categories emerged in the process of collecting. There was no preliminary hypothesis as nobody was expecting this event to happen. Furthermore, there was no reference in the field of design research in how to conduct or catalogue pandemic design. The classification of cases into categories and subcategories presented challenges. What is the ontological nature of a mobile test unit? Is it a product, a service, a tester, a system, a shelter, or an action? This kind of complexity led to a dynamic classification and categorisation process that was executed 'in the moment' influenced by contextual elements and personal interpretations, knowledge, experiences, and judgements. This aspect may result in variability in the assessment. However, as stated earlier, we were not so much concerned with exactitude, but recollection to underpin emerging patterns for future actions.

Review of Early Insights - One Year On

The main design interventions framework, which includes 6 main design categories – Actions, Graphics, Networks, Products, Shelters, and Systems, presented in our book (Figure 4) is potentially transferable to other pandemic events. This aspect is very relevant since the rate at which novel viruses are emerging means other pandemics and emergency events will occur[3]. It is clear public administrations across the world will need to take seriously the need for preparedness for such circumstances.

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[3] To list some of the recent major pandemic scares - the recurrent Ebola virus since 1976, SARS in 2003, Avian flu in 2005, Swine flu in 2009 and the Zika virus in 2015.

Figure 4. Design Interventions Framework

We see the main categories as universally transferable to other types of pandemics and we see the subcategories as operational contextually. Some of the subcategories, for example dashboards, may be transferable to any pandemic event but others, like respirators, may not. With the exception of the introduction of vaccines, the first categorization we implemented still remains valid. So far, we have not been able to find other categories.

In terms of actions, the early citizen-driven portals and platforms gave way to government regulations in the form of specifications on behaviour. This aspect was also illustrated in our research (Figure 5).
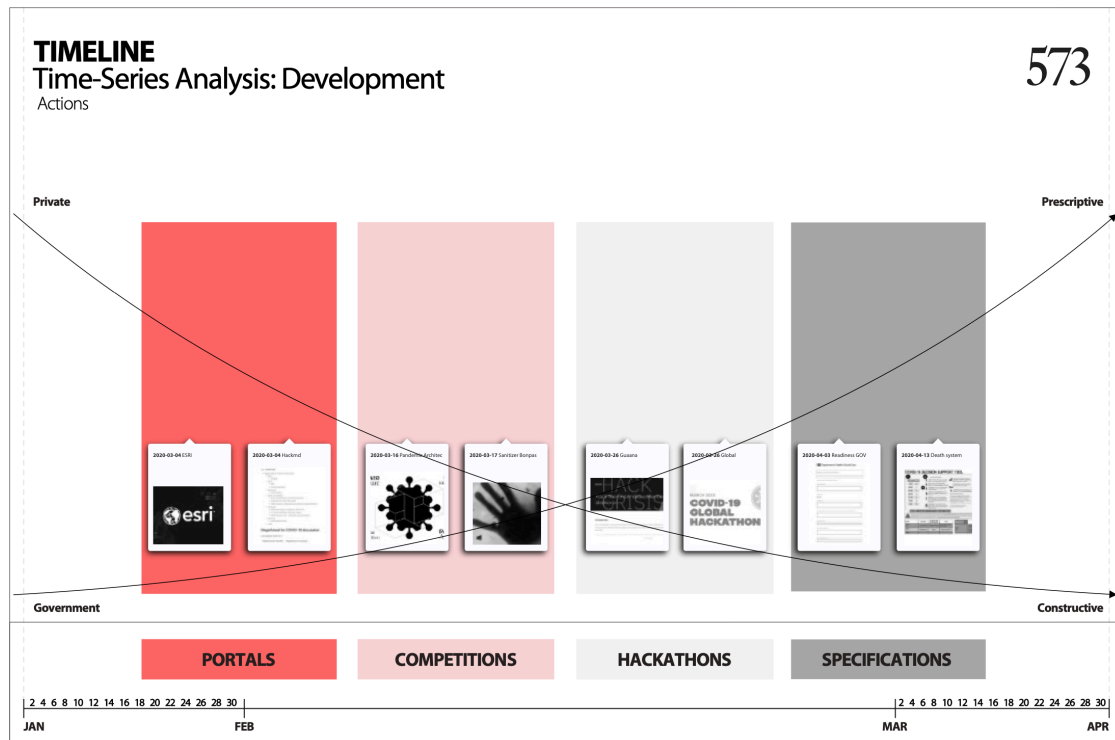
Figure 5. Design Interventions Development (Actions) – Citizens and Government

Another early-stage insight was related to the irrelevance of digital technologies to deal with this event. Governments, contrary to the preliminary insight we produced, keep pumping millions into their development but none of the variations of tracing has worked effectively. Even the main initiative developed by Google didn't work. A UK Government Public Accounts Committee report earlier this year said test and trace (T&T) had "*…minimal impact on transmission despite receiving £37billion of funding*". The Commons Public Accounts Committee (PAC) said in March 2021 there was no evidence the tracing scheme had made a dent in COVID-19 transmission, despite its "unimaginable" budget. In 2020 the UK Prime Minister's office spent £22billion on Test and Trace and the UK Chancellor promised to throw another £15billion at it in 2021, bringing the total cost to £37billion. The PAC report said the UK Government was treating British taxpayers "*…like an ATM machine*" (PAC, 2021).

Despite the failure of digital solutions, the processes we traced enabled us to infer preliminary knowledge by implementing evolutionary traces. For instance, we observed that masks were first instantiated by citizens for free, but as manufacturing shifted its production masks became an object of profit and this tendency of liberal capital has been repeated. For instance, with vaccines, in the early stages, promises were made about distributing them at cost price - promises never fulfilled by the manufacturers even though millions of taxpayers' money was invested in their development.
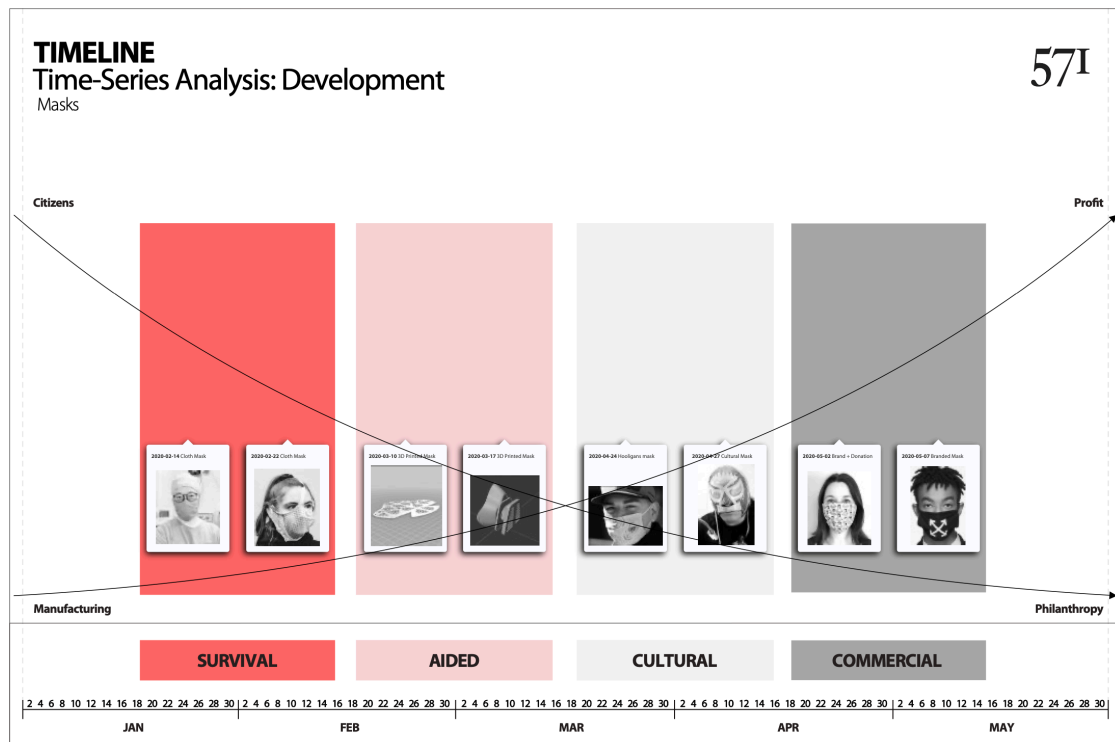
Figure 6. Design Interventions Development (Masks)

Together with masks (Figure 6), dashboards became the main design intervention. One year later, they still remain as the main embodiment to convey information.

In our book we illustrated how the ingenuity, practicality and willingness of designers also generated a range of dilemmas and paradoxes to consider. Our analysis has identified a number of key categories and needs, but also a range of worries, concerns and challenges to be addressed in the future by design and public policy (Figure 7). These dilemmas and paradoxes include maintaining privacy whilst tracking people, ensuring quality control measures whilst encouraging DIY and home manufacturing interventions, and encouraging originality versus derivative design.

Figure 7. Dilemmas and Paradoxes

Why Everything Was Useful

In our approach to writing a design history of the COVID-19 pandemic we decided at the outset that everything we would collect would be useful. Because every design was aimed to help fill the vacuum of administrations that had planned for pandemics but were unprepared for the event it would have been ruthless and inappropriate to imagine selecting 'good' designs or classifying one design better or more worthy than the next one.

So, in our work we are comfortable with stating that every design project we found was as useful as the next one. In the midst of the quarantine in Italy, Franco 'Bifo' Berardi wrote: "*Use value, long expelled from the field of the economics, is back, and the useful is now king*" (Berardi, 2020). The 500+ design projects here add up to a history of the COVID-19 crisis and we expect much of what is illustrated will disappear - so more than likely, as a document, the book will be extremely useful for a long time to come.

In compiling all of these cases, we accepted all design interventions as valid and gave them the same role and status by presenting each of them on a single page. No curation. No selection. No hierarchy. No status. No position. As the COVID-19 pandemic continues to roll on, wave after wave, the tasks of critical analysis and debate are still to follow – perhaps by us, perhaps by other authors in this book, but certainly by others. At this stage of the COVID-19 pandemic, where the book functions as an integral project of response/protest, any attempt to designate or distinguish or select projects will promote a notion of a "good design" and by default demote the rest. This is a typical approach applied by the museum sector concerned with the classification of types.

Already some of the projects collected here are finding their way into the time capsules of museums via projects like Pandemic Objects at the V&A, London. In contrast to these archival practices, the rapid spread of the COVID-19 pandemic around the globe mirrors the fluid global information flows.

The Usefulness of Imperfect Design

As stated, the chronological structure of our book operates as a type of index system that we operationalised by articulating several graphic organisational frameworks enabling projects to be cross-referenced. From this point we were able to organise graphic material progressively to further analyse its evolution. By using chronology to frame the assembly of the book we uncovered evolutive traces; for instance, graphics and posters are first instructional, then emotional, and then they became political (Figure 8).
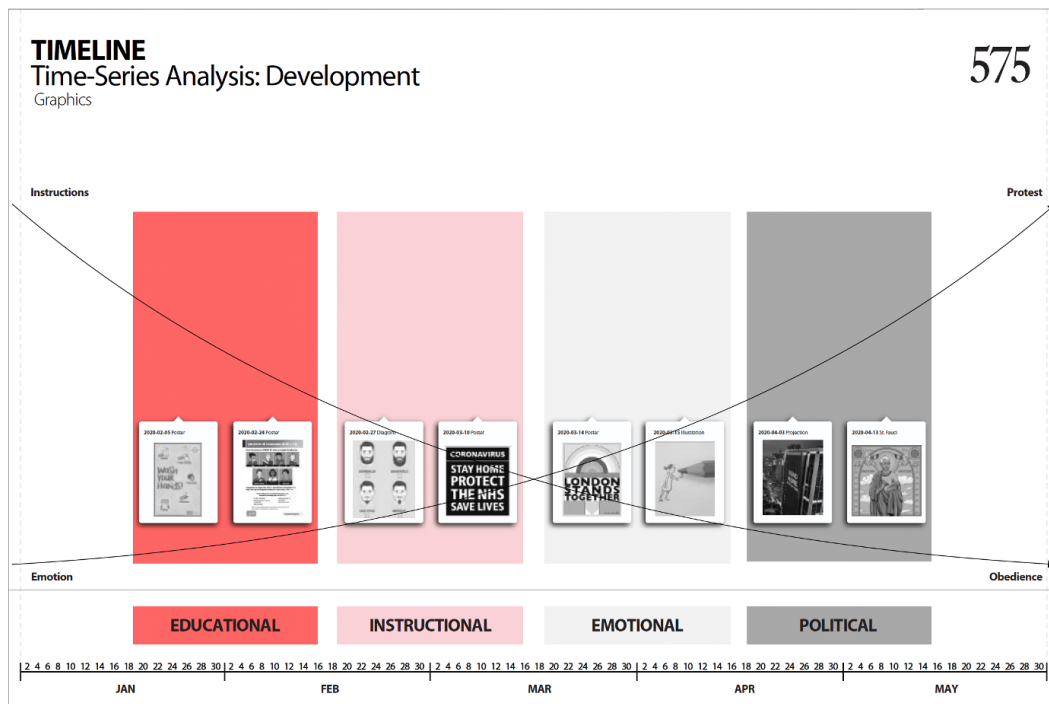
Figure 8. Design Interventions – Graphics (Posters) – from Educational to Political

In terms of Personal Protective Equipment (PPE), we observed transparent face shields becoming simplified over time. The first models were complex and 3D printed. The final models were a sheet of plastic with 2 holes and a band, thereby removing the need for 3D printers. They were not perfect but their rudimentary fabrication enhanced production and sustainability in the process (Figure 9).

Figure 9. Design Interventions – Face Shields Simplification

Furthermore, we discovered how at the beginning of the COVID-19 pandemic crisis, due to a shortage of products, it was a combination of professionals, individuals, groups and communities that stepped forward to fill the gaps left by aberrant public policy, government planning and preparedness. We witnessed that once the systems of production adapted and started to produce/import those goods, the civil production of initiatives/goods decreased in cycles in different countries. The process we adopted for our initial analysis illustrates a design-led alternative to pure statistical and mathematical models.

In this chapter we have told the story of what we did during the first wave of the COVID-19 pandemic – we collected every design intervention we could – and we did this because we reckoned that potentially everything would be useful. And having done this our book illustrates the usefulness of imperfect design. As 'products' became more imperfect, simpler, rudimentary and targeted to vital demand the more it became clear that design cares and really cares. And we did this because we, the authors, have a history of caring about design.[4]

In a 2017 exhibition and catalogue entitled "Nobody's Perfect" by Gaetano Pesce – the well-known Italian architect and designer of the 20th century likened imperfect design to "*…our bodies, all different and all, in a way, disabled*."

Grammatically, the imperfect (from the Latin imperfectus) is a verb tense that refers to a progressive or continuous action unfinished at the time of expression and something immature. The equivalent Ancient Greek term was paratatikós meaning prolonged. The COVID-19 virus is now a pandemic prolonged by variants, all immature and disabling to varying degrees. What is evident from the collection of design interventions in our book – *A Design History of the COVID-19 Virus* - is that imperfection can be a life-saving

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[4] Our history of caring is documented with the Ecology of Care international conferences starting in 2015 and the Does Design Care 1, 2 & 3 workshops starting in 2019 and ongoing.

'accident' and this points to the thought that perhaps it is time for design to give up on designing as it is currently enacted (and taught) and rather acknowledge that an imperfect design will always be a work in progress and as such wholly useful.

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