

Design's Role in Transitioning to Futures of Cultures of Repair

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Abstract This paper traces a historical and conceptual terrain of cultures of repair from a decolonial and ontological design perspective, i.e., through decolonial design. In the face of present and mounting future challenges, particularly Climate Change, consequent migration and global unsettlement, indiscriminately reaching all geographies, cultures of repair afford ecological, social, and technological exemplars of adaptation and resilience. Yet neither the complexity of the trace nor the imperative for appropriation is adequately reaching designers. To explore filling this gap, a relational map is presented here, that aims to aide designers understand four key threads implicated in the destruction of cultures of repair—*concealment; newness; techne; care*—and three key moves toward revaluing cultures of repair—*transferrability, reclassification, amplification*.

Keywords Cultures of repair · Repair · Decolonial design · Recoding · Design · Modernity · Colonialism · Climate change · Resilience · Sustainable futures

1 Introduction

There is a new space opening up for discussion around the word 'repair' and its role in transitioning to sustainable futures. This space is raising important questions concerning the role that modernity and colonialism have played in both destroying and inculcating cultures of repair. Decolonial studies provides a useful framework for engaging with this trace. When coupled with critical design discourse, decolonial design praxis may effectively transfer and amplify resilience afforded by cultures of repair persevering amongst the maelstrom of modernity/coloniality; both gathering in the present and waiting for our arrival in future. In the present, it gathers in the margins; in cultures where everyday practices in care and repair persist in breaking the mold of a colonial matrix of power. As Stephan Jackson [1]

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29 writes of these places, many of the stories and orders of modernity are in process of
 30 coming apart, perhaps to be replaced by new and better stories and orders, but
 31 perhaps not. At the same time, the aftermath of modernity arrives at our feet, such
 32 as in the form of climate change. Amongst these tensions and in the face of future
 33 challenges indiscriminately reaching all geographies, neither the complexity of the
 34 trace nor the imperative of understanding sustainable, futuring, designed/ing
 35 affordances present in informal resourcefulness, resilience, bricolage and repair is
 36 adequately reaching designers, design engineers, product developers and policy
 37 makers more broadly. In order to assist closing this gap, this paper maps a terrain
 38 where one might begin. This study therefore contributes to advancements in design
 39 and design engineering in a similar vein to Devadula and Chakrabati in questioning
 40 the ontological designed/designing “entangled co-constitutive relationships which
 41 humans and technology are in” [2], as transitioning to human sustainment
 42 increasingly becomes a prescient concern.

43 **Decolonial Design:** The last 500 years have left all cultures, lifeworlds and the
 44 entire planet in all its ‘worlds’ entangled in power differential spaces between
 45 modernity/coloniality [3]. Research is emerging into the ontologically designing
 46 historical and futural consequences of this, particularly in ontological design with
 47 the agency of sustainable futures, most notably through Redirective Practice [4] and
 48 Transition Design [5]. Coupled with decolonial studies [3, 6] an emerging terrain of
 49 *decolonial design* is developing in plural contexts globally, one such suite of
 50 articulations can be seen through the recently released ‘Decolonising Design’ online
 51 platform authors [7, 8]. In general, decolonial design is disobedient to dominant
 52 Western design research in that it follows a political objective of three streams:
 53 (a) *unlearning*: critical unravelling and exposing of Eurocentrism, (b) *learning*:
 54 directing thinking-in-action toward identifying what can be learnt from different
 55 modes of being-in-the-world, (c) *praxis*: redirecting away from the hubris of
 56 European modernity towards amplifying pluriversal worlds, while not ignoring
 57 inescapable entanglements amongst modernity/coloniality [3]. Contrary to a grand
 58 totalising vision, working on local situated concerns would be the measure of
 59 decolonial design. In this way it aligns with a commitment to ‘cosmopolitan
 60 localism’ [3, 6, 9, 10]. That is, as Cameron Tonkinwise [5] suggests following Ezio
 61 Manzini, “geographies must be designed to be hospitable to foreigners and not just
 62 to those fit for the local ecologies. While withdrawing the meta-narrative of global
 63 progress, they nevertheless must each in their own way, perpetuate the project of
 64 diversification in order to be open to divergent diversity and migratory difference”.
 65 And finally, decolonial design is an ally with how Arturo Escobar [11] outlines, “a
 66 research and action project for advancing an ontological design approach to the
 67 pluriverse, or ‘a world where many worlds fit’.

68 **Cultures of repair:** At any given time anywhere in the world, two remarkably
 69 disparate repair cultures exist. The first are entrepreneurial maker cultures, some-
 70 where between naively and blatantly bound up in what Filipe Fonseca [12] argues
 71 are capitalist vocabulary’s stemming from the Industrial Age. These repair cultures
 72 have been seduced by industrial economies and productivist imaginations, making
 73 prototypes, usually of plastic that end up in waste, striving towards industrial

standards and mass production. This mode has the backing of governments worldwide, e.g. President Barack Obama's [13] manufacturing innovation hubs and Prime Minister Malcolm Turnbull's innovation nation [14] (Australia) are seduced by 'maker cultures' potential as the engine of a third industrial revolution.

The second are innovative repair cultures constituted by billions of people across the globe making do with what is at hand, through necessity, voluntarily reducing wastefulness or practicing ethics of care and cognitive satisfaction in repairing things; untied or contesting the formers productivist models. The former appropriate and reclassify the latter's political position for their own capitalist means. As Fonseca [11] suggests in his discussion of *Gambiarra*, the Brazilian culture of repair, there is a world of difference between an attitude of hacking to repurpose and a techno-evangelism that makes without any thought for what it destroys. Similarly to *Gambiarra*, French anthropologist Claude Levi-Strauss [15] defines the *bricoleur* as being adept at performing a large number of diverse tasks, but he says, unlike the engineer, his rules of engagement are to make do with whatever is at hand. In India, *Indovation*, or *Jugaad*, has become "representative of the Gandhian ethic of localized empowerment [16]. However, Thomas Birtchnell notes a caution that corporatized co-optation of local practices to entice Indians to consume is also occurring. In Japan, the *Wabisabi* worldview deriving from Buddhism instills a kind of sacred design mentality, of transience and imperfection, practiced in one's relationship to things, most notably though *kintsugi*, or 'golden repair' of ceramics [17]. Other examples such as from the American Great Depression [18], to Cold War Russia [19] to more recently, Papua New Guinea [20], illustrate how famine, conflict and oppressive regimes have ontologically designed conditions of cultures of repair.

In the maelstrom between these two disparate repair cultures, open source digital culture movement, fablabs, hacklabs, repair cafes, maker faires, DIY and craft communities exist. Furthermore, contemporary movements such as 'slow design' [21] and the steampunk movement [22] share commonalities with repair cultures; of breaking, re-shaping, tinkering, DIY and craft. The argument made here is that regardless of which mode, cultures of repair performative directionality sits in the borders between the residue and gathering; the seduction and repression, of modernity/coloniality. These relationally connected traces need to become part of a designer's vocabulary, beyond the current more simplistic narrative of cultures of repair, along the lines of 'the world has a limited amount of resources to use, so we need things to last longer before we have to use anymore resources so we might repair things instead of throwing them out'.

2 Method

This paper seeks to locate a way to speak of repair in a decolonial context and for this to become decolonial design praxis. Therefore, a critical analysis focussed on enquiry into the ontological nature of the relationship between humans and things, with texts chosen from hermeneutic phenomenological philosophy, critical cultural

115 theory, decolonial studies, critical design and technology studies. The texts were
116 interrogated through central questions: (1) What is being said about repair and its
117 role in transitioning to sustainable futures, particularly what role has modernity and
118 colonialism played in both destroying and inculcating cultures of repair? (2) In the
119 face of Climate Change and global unsettlement what kind of praxis is emerging in
120 amplifying decolonial design afforded by cultures of repair? (3) Are there visual-
121 isations assisting designers to this end?

122 3 Results

123 The analysis identified four key threads being spoken about in relation to the first
124 and second research questions, therefore these are brought together in a cohesive
125 order and discussed below as *concealment; newness; techne; and care*. In relation
126 to the third research question there presents a gap in knowledge for a visualisation,
127 to read in conjunction with these threads, therefore the ‘Cultures of Repair
128 Relational Map’ (Fig. 1) has been designed. The aim of the map is to assist
129 designers comprehension of the gathering of modernity/coloniality and its arrival in
130 futures (Fig. 1. part A) in order to be in a position to amplify sustainable activities
131 in repair cultures through decolonial design (Fig. 1. part B).

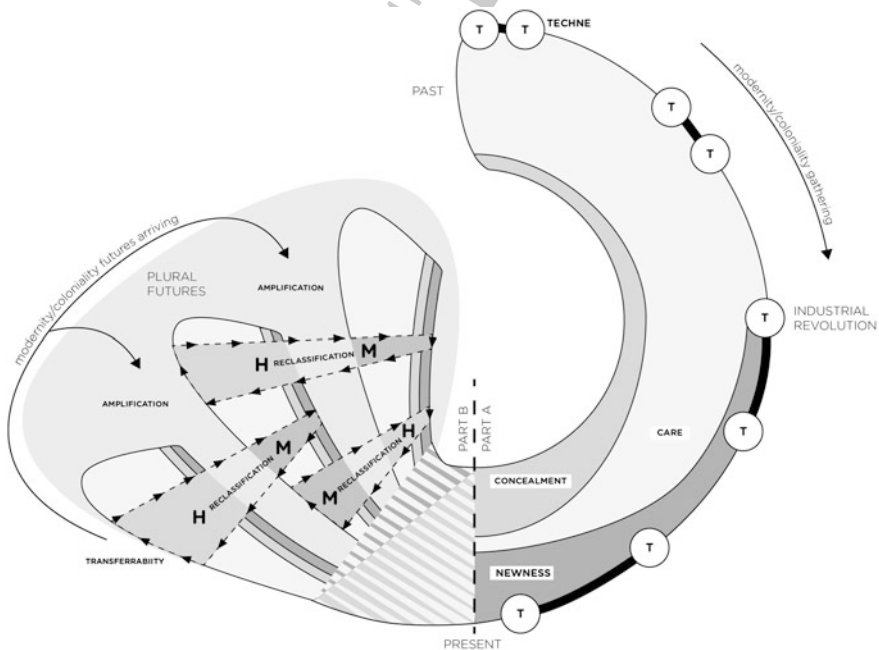


Fig. 1 Cultures of repair relational map (Source Tristan Schultz)

4 Discussion

4.1 Key Threads (Fig. 1, Part A)

Concealment: The phenomenon of concealment has grown incrementally over thousands of years, and best appears in the present in the term 'out of sight out of mind'. The secret lives of objects are concealed in globalized distribution processes and glossy designed packages. Tracing back to agrarian societies, objects were seldom technologically advanced enough to conceal components. Up until the Industrial Age, the level of advanced technological capacity to conceal things was minimal, component parts were seldom out of sight, hence not out of mind. To the contrary, parts were seen, honoured, understood and respected for their inherent craftsmanship. Due to the Enlightenments productivist imaginations fuelling the first Industrial Revolution accelerated technologies developed enough for objects to become much more complex, efficient, smaller with component parts concealed and hence unconsidered. As a surplus of objects accumulated from an acceleration of mass production, advertisers and designers of commodity culture began concealing parts for reasons beyond technological means. The *image* of the *modern*—clean surfaces made desirable—meant consumers no longer cared for hidden parts, nor could they identify which parts might be in need of repair, laying the conditions for systematic planned obsolescence and built in redundancy, decreasing the desire to repair and increasing the desire to consume. That we are emotionally detached through this concealment adds to ontologically enforce our techno-evangelist support for more technical things to suit our fast paced consumer driven lives.

Newness: The culture of newness has grown rapidly with the rise of consumerism since mid 20th century, directed by the Wests imperialist development parameters. Traditional and/or non-western images were recoded as not as advanced, civilised or wealthy as the seductive image of the modern and, subsequently, not as desirable. Modernist designers designed a modern aesthetic style with the symbolic significance of the status of wealth [23]. Increasingly what propels design is the speed of change of styles, a spectacle inherently needed for the perpetuation of the market in a capitalist economic system [24]. This means that newness works against the time things may have as operative existence [25]. Propounding this is a concealment of parts, meaning the life of the thing is dependent on the shortest life of a single hidden component. If a culture is not prepared to balance the price of destruction with giving operative enduring time to the things it creates, then it is a culture of newness. If it offsets the operative enduring time of a thing with repair, it is contesting the spectacle of newness.

Techné: the *techné*' is explored here as the phenomenon of craftsmanship; of the craftsman engaging with conceiving a tool, tool-use and tool-repair respectively; as constituting being-human [2]. Over time, particularly as an intellectual thought since the Enlightenment, Martin Heidegger [26] argues, what he termed as the present-at-hand dominates our everyday experience in that we are only concerned with observing things when they lose their usefulness and fail to operate the way we

174 expect. We look at the thing, disassociated from it, and observe its broken properties.
 175 To the contrary, when a tool or thing is useful it is ready-to-hand, appropriate for a
 176 task; not broken nor demanding our concern. Nigel Thrift [27] argues that it is in this
 177 space, between the visibly ‘broken’ and concealed ‘tool’ that “repair and maintenance
 178 makes its bid for significance”. The presence-at-hand enables a visibility of the order
 179 of things, which we are concerned with getting back to a ready-to-handness so the
 180 world can go on. This phenomenological approach suggests that breakdown and
 181 decay are central necessities to a life purpose [2]. With the human hand as tool bearer,
 182 the relationship between the presence-at-hand and the ready-to-hand forces a reflec-
 183 tion on being human; repair reminds us we are human. To value remaining human, is
 184 to contest against the mechanization of man by working with the hand to curb a world
 185 rendered meaningless by the hands dissociation from reflective action. Concealment
 186 and newness, explored above, produce non-repairable things, which coupled with the
 187 discussion of the hand here, reinforces the designing out (ontologically) the asso-
 188 ciative meaning we make with our everyday experiences in the world through hand
 189 actions of bricolage, maintenance and repair.

190 **Care:** An ethics of care has diminished considerably as a consequence of
 191 modernity. Prior to this, dominantly across the globe, care for repair had been
 192 inextricable with life affirming cosmologies and ontologies inculcating reciprocal
 193 exchange with the biosphere upon which they depend. However, over the course of
 194 modernity/coloniality attention is redirected away from this bind. The Society of the
 195 Spectacle, Guy Debord [24] argues, now colonises our attention. Similarly, Bernard
 196 Steigler [28] writes, our attention is captured by “the psycho-technologies that have
 197 developed with the radio (1920), with television (1950), and with digital tech-
 198 nologies (1990), spreading all over the planet through various forms of networks”, a
 199 vicious circle of the destruction of attention for anything or anyone beyond subjects
 200 of a spectacle. For Zygmunt Bauman [29], this lost proximity to the Other further
 201 manifests through the colonization of privacy, sensitivities and dignity, eroded
 202 through the proliferation of the likes of Facebook and other social media demands,
 203 as an insensitivity to human suffering; a moral blindness. A proliferation of con-
 204 cealed, new, consumer driven objects and things coupled with a disassociation from
 205 reflective action has brought-forth a deterioration of repair practices; a fissure where
 206 social technologies now further compound an erosion of attention and care for
 207 repair. Added to this is our short-term attention span, where we only have ‘time to
 208 care’ for very few things and not for a very many other efficient, convenient,
 209 durable, reliable, distant and imperceptible others in ‘no need of repair’.

210 4.2 *Towards Decolonial Design (Fig. 1, Part B)*

211 Some designers are moving to counterbalance all this with designs that require
 212 more laborious material interactions, built in regimes of maintenance and repair,
 213 disassembly and transparency. Some are following the path of Japanese *kintsugi* by
 214 increasing the sign-value of wear and tear, such as Emotional Design [30], which

215 insists on deep and meaningful relations between humans and 'evocative objects'.
216 An issue with some of these movements however, is that many cultures are still
217 dealing with the leftovers of the modern world piling at their feet. Moreover, as the
218 world increasingly accumulates waste, migrates and generally feels the affects of
219 global unsettlement, so too will these piles indiscriminately permeate previously
220 sanctioned geographies and city streets. Therefore, as has been drawn together
221 above, searching for sustainable futures might focus on a more poignant framing of
222 the trace of the decay that already exists and the ways cultures are creatively
223 innovating with this decay.

224 There is an argument that designers can put to task their skills, techniques, and
225 mentalities to designing decolonial futures aimed at, as Escobar asserts, advancing
226 ecological, social, and technological conditions where multiple worlds and
227 knowledges, involving humans and non-humans, can flourish in mutually
228 enhancing ways [11]. He contends that communications strategies in this vein
229 would serve two main purposes: "to construct narratives that persuade people to
230 think about why the One-World story no longer quite makes sense; and to con-
231 tribute to make visible the projects by which other practices attempt to persevere
232 and perform themselves into worlds" [11]. The construction of the above four key
233 threads begins serving the first purpose. A designer can then enfold the second of
234 Escobar's call to action through three successive modes; *transferability*, *reclassi-*
235 *fication and amplification*.

236 **Transferrability:** As populations increasingly move, both the trace of barriers
237 and the trace of perseverance move with them. As Michel Foucault would remind
238 us, central authority fragments as one moves unshackled from centres of power. On
239 top of this, as one moves, one carries less, enforcing objects and things to be
240 multi-use and whatever is unready-to-hand becomes present. Conspicuous, obtru-
241 sive and obstinate things [26] enter perceptual experience and concern, and are
242 bricolaged or repaired. This suggests a three-fold act occurring, of (a) moving with
243 repair skills from their geography; (b) unshackling power through moving from
244 their geography; and (c) elevating perceptual aptitude to exploring for new inno-
245 vative bricolage and repair while on the move. These three knowledge acquisitions
246 are not present in a host geography in stasis. At the same time, in any host geo-
247 graphy there might already be present situated cultures of repair. They may be (a) a
248 non-sedentary culture existing for many thousands of years, whose localised
249 movements are bound with an ethics of care and repair; (b) frivolously persevering
250 where modernity/coloniality has inculcated a culture of repair; and (c) coming to
251 terms with the precarity of their stasis and in early stages of movement and flux
252 bringing-forth new perceptual aptitudes to exploring innovative bricolage and
253 repair. These three knowledge acquisitions may or may not be present in other
254 geographies in stasis, nor in the cultures of those arriving. This illustrates six
255 'transfer gaps' in research in which a designer might focus their exploration.

256 **Reclassification:** As transfer gaps turn to praxis an inescapable reclassification
257 of the symbolic value of any repair activity occurs; this has happened to repair
258 before. Disruptive technologies, distributed manufacture and fablabs have been
259 reclassifying the word 'repair' for their own productivist means for some time.

260 Remaining focused with an agency of decolonial design here, the question is what
 261 reclassification might create sustaining qualities and what might destroy? The
 262 argument here is that as long as reclassification is within the terms of taking with it
 263 where the repair activity contests concealment; newness; where it contests the
 264 disassociation from reflective action with the hands; where it elevates care,
 265 reclassification will retain and possibly amplify pluriversal sustaining worlds. From
 266 this perspective it is not the fablabs and maker spaces that are the problem, it's their
 267 deliberate reclassification away from repairs decolonial directionality and toward
 268 universalising productivism. In transferring, a designer would first identify what is
 269 presently classified; is it decolonial? If yes, how does it reclassify while retaining
 270 those same qualities in the same geography; or how does it transfer to another
 271 geography? Then, what is the appearance; is the repair activity an image of
 272 decolonial design; an explicit strategic plan for decolonial praxis; and/or an implicit
 273 pragmatic instruction assisting the repair of objects and things?

274 **Amplification:** Once designers have identified a transfer gap and reclassification
 275 opportunity, exercises in recoding might occur that amplify aptitudes and affor-
 276 dances of climate and conflict migrants, contra-productivist movements, informal
 277 resourcefulness, resilience, bricolage and repair. Manzini talks about amplification
 278 when he discusses design intervention as 'weak signal amplification' [31], which
 279 "calls for the designing of communicative artifacts to make initiatives visible that
 280 would otherwise remain hidden". This might take the form of a website, films and
 281 documentaries, festivals, exhibitions and events as well as maps, instruction and
 282 repair manuals, information graphics and how-to guides. Regardless, as Manzini
 283 notes [31] it is a politically value laden judgement. A designer is "choosing the
 284 criteria by which to look at social dynamics, and on the basis of which to 'extract'
 285 the promising cases" [31]. Relevant to this discussion, this decolonial judgement
 286 should be in connection with ontological design and sustainable futures, what Tony
 287 Fry calls an imperative of Sustainment [4]. This is to identify structural unsus-
 288 tainability (the negation of time) in the cultural value of repair and take steps to
 289 recode it; or identify sign values in repair that sustains (that adds time) and seek to
 290 dramatically increase its value in society by recoding. The field of Transition
 291 Design also refers to amplification as a key area transition designers work in,
 292 "amplify[ing] and connect[ing] grassroots efforts undertaken by local communities
 293 and organizations" [32]. Designers might employ amplification methods from these
 294 emerging fields while working through the Cultures of Repair Relational Map.

295 5 Limitations

296 A subsequent paper will report on the effectiveness of working with the key threads
 297 and map in field studies and pedagogical settings, along with other modalities of
 298 amplification occurring, such as through the established explorations of Manzini
 299 [31] and John Thackara [33], inside and outside cultures of repair. So too,
 300 Migration Studies requires a thorough analysis to understand what can be learnt to

301 contribute to this discussion. On the relational map, Bruno Latour famously said the
 302 designerly 'drawing' skills of designers could be put into play, not just to design
 303 objects, but rather to draw things together, by opening up controversial *things* [34].
 304 An attempt has been made here, but further reflection is needed, via information
 305 design scholars, Johanna Drucker [35] and the author's [36] previous work, on the
 306 traps that information design and mapping affords.

307 6 Conclusion

308 Through a trace concerning the role that modernity and colonialism have played in
 309 both destroying and inculcating cultures of repair decolonial design is an emerging
 310 field that can engage in the praxis of transferring and amplifying opportunities
 311 afforded by cultures of repair in transitioning toward sustainable futures. Four key
 312 threads tracing implications associated with repair cultures have been brought to
 313 focus here; *concealment; newness; techne; and care*. A further three key threads
 314 have been drawn together through which designers might move toward praxis:
 315 *transferability, reclassification, and amplification*. An aide to assist designers see
 316 and speak of repair in a decolonial context and for this to become praxis is also
 317 presented in the Cultures of Repair Relational Map. This is to contribute to a field
 318 concerned with ontologically redirecting toward decolonial and sustainable futures,
 319 with promising research gaps emphasized in transferring repair knowledge across
 320 geographies—from people moving due to climate change and global unsettlement—
 321 reclassified and amplified by decolonial design.

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