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EDITORIAL

BLANCA CALLÉN
MELISA DUQUE

EDITORIAL: REPAIRING DESIGN: DAMAGE, CARE, AND FRAGILITIES

Editorial: Repairing Design: Damage, Care, and Fragilities

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Abstract

Installed in a climate crisis derived from what has been named the Anthropocene, it is urgent to review the role that design has played, in complicity with the industry and the market, in this eco-social damage at a planetary scale. For this purpose, we propose to take repair as a heuristic from which to interrogate the practice of design and its products. The reason is that the position that repair occupies—having to confront and respond to the failures and ruptures derived from design decisions—constitutes a privileged point of view from which to question and revise material and disciplinary limits: the what, who, how, when, where, why, or for what of design practices. Some fundamental questions that run through these two volumes (#23 and #24) are: How could repair be an ally of design? Or, how can a "reparative design" avoid or minimize eco-social damages?

Note for readers: This editorial in English is the result of translating a co-authored text written in a Spanglish, which is informed by both our Hispanic origins. The syntax of writing in Spanish tends to a more abundant use of subjunctive sentences, or the use of synonyms to refine the adjectivization of nouns. This is perhaps more evident in the translation of the Spanglish version than in the Spanish one. But far from considering it an anomaly or defect to be avoided, noticing these differences in writing, thinking, and feeling, served as a reflexive exercise that we decided to make explicit in this paragraph, with the intention of making visible where this text is coming from: written by Spanish-speaking authors, edited by a journal situated in Latin America, and in dialogue with authors and references from multiple cultures and languages.

1.   WHY REPAIR DESIGN?

Every matter faces time passing, damage, breakages, and decomposition. We all know and experience, day by day, types of finitudes and decay that are as ordinary as inevitable. But there is also another kind of brokenness, precarity, or vulnerability that does not respond to inevitability, but is instead strategically supported, pushed or impulsed by markets, deriving in extra-ordinary damages. Eco-social

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damages in the shape of waste, ruins, or obsolete objects; decaying matters of what previously were design products from these markets. Nonetheless, to counter these fragilities and vulnerabilities—either those constituted by inevitability, or those provoked and accelerated—corresponding practices, resources, and diverse acts of maintenance and repair need to be activated to address damage, brokenness, and failures, and aiming at the continuity of things, at extending the lives of objects and materials, including infrastructures. This requires a confrontation with the decision made for past designs, to find answers to the consequences of damage: the voluntary and involuntary, the planned and accidental ones.

In view of the harmful environmental consequences (in terms of waste, contamination, exploitation of natural finite resources, etc.) derived from approaches to an industrial design that operated at the service of a capitalist economy, mainly interested in the production of disposable fast consumerism—Victor Papanek (1972) had already defined design as the most dangerous profession after marketing. Today, nearly 50 years after this accusation, and experiencing a climate crisis within what was named the Anthropocene—or Capitalocene (Moore, 2017)—, it becomes urgent to revise the role that design plays in this eco-social damage at a planetary scale.

That is why we propose, throughout the two volumes of this Special Issue, to situate repair at the center of heuristic analysis and reflections from where to interrogate the practice of design and its products, consequently linked with semiotic-material reproductions of worlds. We work with the notion of repair understood as an open concept that can include diverse interpretations and possible practices. That is why our intention was not to depart from complete or closed definitions, but instead, to leave these concepts open so that the authors could generate applied and situated responses, and make sense of these through diverse approaches to repair.

For this special issue we were inspired in understanding repair as a care practice that confronts and responds to breakages and failures derived from previous design decisions, hence, it could have a privileged position to interrogate and revise design and its limits. As Jackson proposes (2014), if repair and repair practitioners have been historically attending to the damages and blind spots of design, then they might have an epistemic advantage in the discipline of design, its products, and consequences. If we assume, moreover, that every positionality on knowledge is always partial and situated, lacking complete pictures (either from design perspectives situated at the creative 'beginnings', or from repair perspectives situated at the 'ends'); then, the articulation between these diverse epistemic positions becomes necessary to displace limited points of view and to strive for 'better visions' (Haraway, 2016) about each practice and its effects. Furthermore, creating these meeting spaces facilitates reflexivity about and towards co-responsibilities.

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Some of the main questions that result from the previous reflections, which resonate throughout the two volumes, are: How can repair be an ally of design? What can design learn from repair? Or, how can a reparative design avoid or minimize eco-social damages? Because repair, from historically invisibilized positions—emerging at times 'after' and reactive to design's creativity—has been demonstrating its position as a creative and innovative practice in its own right (Denis & Pontille, 2022; Henke, 2019; Houston, 2013, 2019; Houston & Jackson, 2016; Martínez, 2019; Rosner & Ames, 2014; Udall, 2019); with capacity to dispute the limits of design's materiality and functions. But also, its disciplinary limits: the what, who, how, when, where, why, and for what of design practices. Even through multiple approaches to repair, within diverse contexts and motivations from where to repair, this dispute can contest some of the established impositions of design and its associated industry. By sorting, for instance, temporal interruptions to extend the lives of matters and products of design towards uncertain futures. Or by challenging ontological positions of objects, through the opening, reconnection, alteration, and re-composition of their parts, to return them to a position of continual prototyping and enhance their understanding towards their redesign.

From these positions and alongside practitioners who often practice informally and are not recognized as experts—as described by feminist economist scholars (Carrasco Bengoa, 2001, 2006; Pérez Orozco, 2006; Precarias a la Deriva, 2004, 2006), regarding labors of care and reproduction (of public and productive work recognized economically and socially)—repair, as a labor of care, sustains and manages the continuity of life, thus, including the material lives that were ones produced by design. So, drawing from errors, failures, ruins, breakages, and material vulnerabilities; and engaging in processes of embodied and sensory diagnoses that listen attentively, test, and reverse engineer, repair can generate valuable knowledge to reflect, revise, and visualize, once more, how design is and it could be.

Our repair thinking has been informed by interdisciplinary scholars and practitioners that have written about its multiple practices from the areas of social sciences, humanities, and design research. The collaborative thinking between design and repair is undergoing a current blossoming, with a range of inspiring recently published works (see, for example: Denis & Pontille, 2022; Mica et al., 2023; Papadopoulos et al., 2023). We draw from these and from previous perspectives that explore the open-endedness of design, as 'unfinished' (Tonkinwise, 2005), including stages of 'design-in-use' (Maestri & Wakkary, 2011), 'design-after-design' (Ehn, 2008; Redström, 2008), and 'designing-before-reuse' (Duque Hurtado, 2018), as emergent manifestations of 'designs with many names' (Calderón Salazar & Gutiérrez Borrero, 2017). Through repair, design can also be

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'disobedient' (Oroza, 2012) and include approaches of care to attend to broader social, environmental, or political aspects bundled in the broken materials that convey collective repair actions (Crosby & Stein, 2020; Graziano & Trogal, 2017; Harvey, 2019; Hector & Botero, 2022; Rosner & Ames, 2014; Udall, 2019).

However, repair has also been acknowledged as playing complicit roles in the maintenance of problematic infrastructures of power (Henke & Sims, 2020; Ureta, 2014) that "patch capitalist socio-material relations that come apart at the seams" (Schmid, 2019, p. 246). Nonetheless, its value has been recognized for the potential of the transformative and generative change that it can develop through theory-making practices (Crosby & Stein, 2020; Martínez, 2019, p. 6; Tironi, 2019), and through applied practices to foster "timely, materialized, and hopeful ways of thinking, making and fixing the worlds around us" (Jackson, 2019, p. 346). As a result, repairing design processes from affective, relational, and 'intimate entanglements' perspectives (Callén Moreu & López Gómez, 2019) can contribute to make possible practice-led socio-material encounters for 'learning without teaching' (Strebel et al., 2019), with implications to diversify design education and pedagogies (Noel, 2022; Song, 2023) that can account for decay (DeSilvey, 2017) and destruction (Akama, in press) as opportunities for revaluing (Pink et al., 2022; Reno, 2017) and for rethinking design (Callén & Duque, in press).

Through articles, interviews, a book essay, and postcards from abroad, these two volumes explore a spectrum of possibilities between *designing by repair* and/or *repairing by design*, to try to understand how the repair practice permeates design and its disciplinary limits, by challenging, expanding, or recreating its methods, agencies, temporalities, spaces, concepts, pedagogies, and hegemonic objects. Moreover, how repair, from diverse disciplinary fields (portrayed by the postcards), can become an ally and offer images, gestures, and generative practices that could foster preparedness, to avoid or respond to present and coming eco-social damages.

2 REPAIRERS AND REPAIRS: AUTHORS AND CONTENTS

These two special issues are the result of the collective efforts of over 120 people, including more than 35 article authors and co-authors, more than 70 peer reviewers, two interviewees, two authors of a co-edited book essay, eight authors of interdisciplinary 'postcards', two co-editors, the chief journal editor, and their colleagues from the design and publishing team, as well as the many other human and more-than-human collaborators that accompanied the process. The diverse perspectives, profiles, and expertise around repair convened on these publications include academic practitioners, such as PhD candidates, early career researchers, and professors; and practitioners such as designers, repairers, artists, activist collectives, and everyday life experts. Geographically, the authors, their stories,

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practices, and field sites are located in the global Souths, Norths, in their countries of origin, and in the in-betweens of their multiple diasporas, which includes places like Chile, Uruguay, Colombia, Venezuela, Brazil, Mexico, USA, UK, Sweden, Finland, Belgium, Spain, Estonia, Switzerland, Ghana, Australia, Tasmania, and New Zealand. Such heterogeneity of situated visions and placed experiences is also part of the way in which design could be 'repaired' with the inclusion of many voices, beyond its disciplinary limits. In this sense, we are grateful and deeply inspired by the response to this invitation from all the contributors, both those who made it to the final publication and those many others who, for a range of reasons, had a shorter engagement.

We want to welcome you into the process of reading through all the components of this two-volume with a note of caution: to please read with care for those who wrote, who informed the writings, and to yourself. Many of the contributions cover sensitive themes about hopeful repair and recovery, but also about loss and grief, so please read with discretion. Next, we give a summary of each of the sections to help you locate the many entry points into this body of repair-and design-inspired works.

Articles

As a result of this call for papers, two special issues will be published: the one you are currently reading, and a second volume that will be published in January. In both volumes, in the articles, authors propose a wide range of approaches to repair and design, including concepts, methods, practices, generative critique, and interdisciplinary theories. These works are situated in urban spaces and infrastructures, country lands and sites, design studios, classrooms, homes, and digital spaces, where reflections around design focus on the skills, lived experiences, and sensible material relations that practitioners are engaged with during the emergent tensions, politics, and negotiations of reparative work.

This first volume starts with a pause. An invitation by Tania Pérez-Bustos and Andrea Botero, who met with their students, Nordic forests and sensors, and Southern threads and ancestral techniques, to open spaces for reflexive pauses: by sitting, knotting, and creating together a speculative material and collective register of their vulnerable experiences. This exercise left traces of the voids they each faced, leading them to consider the importance of contemplation and catharsis as generative anticipatory pauses before repairing. Fernando Domínguez Rubio continues with a proposal on the conceptual value of fragility, to open political and ethical vocabularies for cultivating humble attention to loss. Then, Florencia Muñoz, Ricardo Greene, Tomás Errázuriz, and Rubén Jacob-Dazarola share their experiences meeting with Don Eusebio at his home in the Chilean countryside, where they learned from his ways of transforming materials present and at

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hand in his environment into everyday tools, evidencing passed-on past knowledge that they argue can inform future approaches to more sustainable ways of living.

Francisco Martínez offers insights from a land of mines and their aftermath, in Estonia, where a phenomenon of voids on the ground threatens the ways in which people can carry out a healthy living. He also shows how people negotiate a sense of loss when they think about their futures there, while managing to maintain the structures of buildings safe—many devalued and empty due to consequential migrations. From mines to skies, Cyrus Khalatbari begins by challenging 'cloud' metaphors in digital materiality narratives. Followed by a landfill grounding, to unpack the back boxes of e-waste, and to illustrate the value that is generated at Agbogbloshie, where networks of 'unmakers' and 'remakers' actively work in this 'urban mine' site. Guy Keulemans, Trent Jansen, and Lisa Cahill present a project rich in practical examples of design-led repairing, which created an interdisciplinary collaboration between design, art, and craft practitioners who were invited to engage with a 'transformative repair' approach to revitalize the "aesthetic appeal and cultural value" of meaningful, yet broken or obsolete design objects. To wrap this section of articles with a 'gold medal of dishonor', Tony Fry and Diseño Detonante develop a visual and theoretical provocation to 'repair ourselves' from our fragility.

Postcards

Hoping to further foster an interdisciplinary dialogue, we created a section of 'Postcards'. The notion of postcard is used here as a conceptual tool and practical method to engage with disciplines 'other-than' and 'outside' design. For this section we invited authors to respond to the same five questions about the ways in which they understand repair in their own disciplines and practice, with one image to illustrate their text. These questions (which we extend the invitation to readers to ask themselves) were:

▸ How is damage/brokenness defined in your discipline and field of work? How do you identify it?
▸ How is repair defined in your discipline and field of work?
▸ What methods support diagnosis and repair processes?
▸ What tools, materials, skills, and knowledge characterize these processes?
▸ Five key repair concepts in your field.

The collection starts with Elsa Callén, who shares her practice as a geneticist in the National Cancer Institute (NIH, USA) by zooming into the detailed relationships that unfold between enzymes and proteins to repair cellular DNA. Pilar Andrés, from the Center for Ecological Research and Forestry Applications (Spain), then takes us into her field sites to explain the depths of soil liveliness and of concerning earthly unbalance that soil repairers work tirelessly with. Samuel Céspedes, from Sindillar (the first independent union of domestic and care workers

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in Spain), unpacks the socio-political dirt that domestic cleaners work through. Oscar Martínez, lecturer at the Faculty of Social Education and Social Work Pere Tarres (URLL), also affected by long COVID, challenges healthcare approaches to long COVID with personal narratives from lived experiences, to develop intuitive and attentive care practices to face this emerging, unknown, and debilitating illness. Azucena González San Emeterio, psychotherapist at Psicoterapia Gestalt y Formación (Gestalt Psychotherapy and Formation, GPyF) in Madrid, offers a caring perspective from her psychotherapeutic practice, to learn about the value of listening, of identifying and expressing felt pains, as a pathway towards attending emotional and moral damages.

Santiago Gallego shares his experiences as an editor and proof-reader working with thousands of pages from the 'Comisión de la Verdad' (a temporal and extrajudicial mechanism created after the peace agreement of 2016, in Colombia), aimed at offering a social justice angle to repair. This post-card further reveals the practice of listening at a large scale, employed to trace war conflict harms, to provide victims with truths for clarity, dignity, and in hopes for reparation and no future repetition. The Restarters BCN collective, from Barce-lona (Spain), dedicated since 2015 to the organization of Restart Parties (free and public events where repairer volunteers help participants to fix their own electric and electronic devices), explain the sensorial processes of diagnosis involved in detecting damages and avoiding e-waste. Finally, with Noelia Martínez, member of the Adaptive Optics group at the Australian National University Research School of Astrophysics and Astronomy (RSAA), we look into the processes of repair needed to keep astrophysics tools in order to maintain a continuous clear gaze out and beyond the sky into the 'mysteries of the Universe'.

Interviews

We have two very special interviews, one with cultural geographer Caitlin DeSil-vey, and another with social anthropologist Tim Ingold. Both conversations were guided by variations of the same open questions:

▸ Could you share an image, scene, memory, or experience of repair that you en-joyed? Or felt frustrated with?
▸ What roles have repairing and its family of practices played in your work?
▸ How could repair be a design and research method?
▸ What are the possibilities and limits of repair at political levels?
▸ What would you ask a repair practitioner?

From their unique perspectives, both are generous to share two of their recent ex-periences of repair at home, which became personal entry points to reflect, write, and create a conceptual conversation together about the generative possibilities of repair and design collaborations. An ecological, ethical, ongoing, open-ended

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line of thinking and sensibility threads along both interviews. Caitlin offers a range of concepts that challenge the finitude of design objects, buildings, and environmental sites, to create pathways that consider the value of collaborating with unknown non-human agencies that can emerge from processes of decay, ruination, release, and palliative engagements with affective material worlds. Tim creates a 'meshwork' of lines, circles, sounds, and definitions as he writes about repair as a research method for designing that is eco-political, as it is embedded and bound to the world. Both conversations are left open, and questions are asked by them to the readers as invitations for a continual dialogue on thinking, writing, designing, repairing, and for future interventions. Waters, leaks, woods, music, hands, memories, grandparents, joins, and cords were guests of honor.

Book Essay

Aware of the fertile moment that repair is undergoing and the growing interdisciplinary field of study that it is becoming, we wanted to reflect on this by inviting voices working, directly, with design perspectives. Kate Irvin and Markus Berger share their experiences as co-editors and authors of their recent book *Repair: Sustainable Design Futures* (Routledge, 2023). They present an essay as an entry point to the 'many voices' that collaborate in the 30 chapters that compose the book, grouped into two parts: 'Reparative Thinking' and 'Reparative Practices'. It closes with an opening and foreword by Arturo Escobar. Their book is, moreover, an invitation to continue adding to the 12 words of the 'Lexicon of Repair' of 12 authors, which lives in their website and appears on the Digital Commons.

3.   REPAIR AND EDITORIAL LIMITATIONS

In these two volumes we present a range of themes and perspectives related with repair and design that we hope will contribute to rethinking some fundamental aspects of design, including its products, agents, methods, temporalities, and spaces of practice and education. However, we noticed gaps in other aspects that did not receive enough attention in this special issue call, such as: more-than-human perspectives (Stead & Coulton 2022), which can advance right to repair approaches; and material properties that could be auto-repairable (e.g., concrete mix developed by the Romans) (Seymour et al., 2023). Another perspective that brings repair and design together and that can open further possibilities, involves digital spaces and algorithms, seen for example in recent work led by Minna Ruckenstein ("Valuable breakages: repair and renewal of algorithmic systems (REPAIR)").[1] Future research in these areas could help to imagine, understand, and materialize valuable expressions of what we conceive as reparative design.

Beyond the editorial limitations identified, we also recognized other gaps related with the conceptualization and practice of repair itself. Just as we

1   https://www.aka.fi/en/strategic-research/strategic-research/strategic-research-in-a-nutshell/programmes-and-projects/shield/repair/

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understand repair as a care practice, it is evident—as feminist scholars have argued (López Gil, 2013)—that care has limits. That we cannot care or repair everything, and that care and repair are not 'good' or beneficial *per se* (Callén, in press). The corresponding approaches cannot be defined *a priori* nor out of context; each case or matter will instead require a situated and ecological perspective (Domínguez Rubio, 2016), and to consider the specific needs, capabilities, tools, possibilities, wishes of its agents, and elements involved: repairers and repaired (even when both positions can operate simultaneously).

Otherwise, morality and essentialism towards repair and durability as necessarily positive, would be dangerous (Callén, in press). Also, because not every repair is a success; neither does it fulfill the initial expectations; nor aims for the reconstruction or recreation of its original shapes and functions; and durability is not always desired. Repair, from an epistemic perspective, goes beyond concrete objects and discrete entities, to be conceived systemically and with a commitment between its parts. A commitment that, at times, may demand or derive in further brokenness from the initial rupture, or in elimination and destruction. Repair could even 'simply' require the hard task of accepting loss and finitude, with irreparable transitions through pain. So, what can and what cannot be repaired? What can repair reach? What is all that is repaired when we repair? When and under what circumstances can something be considered repaired? What determines the success of repair? What could be a 'good' material 'death'? These are some inquiries that necessarily accompany the acts of repair, explicitly or implicitly.

Thus, despite our initial motivation for this special issue on the potential benefits of repair in dialogue with design, some risks and challenges cannot be underestimated. Repair, for instance, does not confront or interrupt capitalist economy *per se*, as it can be co-opted and instrumental (Schmid, 2019, pp. 231, 246) for niche markets that are dependent on its continual over-production. So, repair is at continual risk of absorbing the damages of the violent productivity of capitalism, same as it happens with invisible care labors of life maintenance, feminized and racialized, which occupy the base of the economic iceberg (Pérez Orozco, 2006). Thus, repair is trapped in a paradox (Precarias a la Deriva, 2006): as a necessary task, invisibilized for the sustainment of life, that when interrupted and then made visible, unfolds in collapsing effects.

Repair is not exempt from power relations related with class, race, origins, and gender (Rosner & Ames, 2014; Young & Rosner, 2019). It is noticeable how the bodies and material conditions of people maintaining repair practices, continue to reproduce stereotypes fixed in gender binaries, racial and socio-economic status that reproduce hierarchies, privileges, and dichotomies of denomination (Henke, 2019; Jackson, 2019; Martínez, 2017) between geographies (Souths

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and Norths), knowledge (expert and lay) (Houston, 2019) or contexts (productive/ public, reproductive/private) (Carrasco Bengoa, 2006; Denis & Pontille, 2022; Pérez Orozco, 2006). Labors of maintenance and repair are often undervalued and lack social and economic recognition, in contrast with other tasks of 'authorship' and productivity considered new and innovative.

Repair is then challenged as a practice, concept, and way of thinking, to be politicized as a collective tool to identify, make visible, and reclaim co-responsibility for damages provoked, in this case, by design at the service of economic-led interests. That is why, when we suggest repairing design, it becomes essential to analyze and interrogate the capitalist system and the whole circuit of extraction, production, distribution, commercialization, consumption, usability of objects and things created, and agents involved. But also, the educational spaces parallel and complicit with these circuits, where the practice of design continues to reproduce itself.

4. FUTURE REPAIR PRACTITIONERS

The perspective of futures is intrinsic to design and repair. Both, through their practices, make projections from situated moments (from materials and marks of the past that gave rise to the thing in hand) to make possible, with consecutive adjustments, materic futures. From theories and practices of design research and social sciences, repair and design have been conceptualized from various approaches as generative practices of futures. For instance, Tony Fry with his proposed notion of 'defuturing' (2020), as a conceptual approach to 'reverse engineer' designs' harms. Moreover, to situate in the unfolding future, Transition Design (Irwin et al., 2015) created a continual temporal bridge for design to attend to its limitations, while accompanying processes of change that are embedded in designing for/with. Repair is also proposed as a technical craft, with pedagogical, manufacturing, and ethics of waste implications (Crosby & Stein, 2020; Harvey, 2019; Hawkins, 2006), or as open-ended interventions that may include 'curated decay' (DeSilvey, 2017), and participate in design ethnography for interdisciplinary collaboration (Pink et al., 2022; Pink & Salazar, 2017). The interrogation of futures as a design intent opens pathways for revision. As Fry (2020) proposes, if "using defuturing to make present that which defutures is the first act of informed futuring" (2020, p. 239), then, repairing design is a form of defuturing for re-designing. That is, a practice-based process of learning that sits with hindsight as a reflexive probe and provocation to foster intentional, improvised, ethical, responsible, socio-material, and eco-systemic approaches to repair, by designing otherwise: including due acknowledgements, pauses, alternative pathways, interdisciplinary collaboration, action, and activism.

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In this sense, some of the articles and texts in this special issue offer invitations to think and practice repair and reparative design of futures: as a thought that can have the audacity of being fragile, and tempted to sit with the discomfort of partially incomplete and always indefinite answers (Domínguez Rubio); that can look towards the margins (epistemic, geographical, political) from the present to maintain past learnings and ancestral knowledge alive that can equip us better to face environmental challenges (Muñoz et al.); that dares to un-design the infrastructures and productive extractivist principles that brought us here (Martínez); and that contributes to rewrite (social and new media) history as explicitly analog and material (Khalatbari).

Repair, then, is not only a powerful tool for resistance and accusation that evidences matters (*matter matters*) (Puig de la Bellacasa, 2011) that are absent, hidden, neglected, at fault with injustices of all kinds. Simultaneously, repair has a purposeful character to innovate and produce (as it has so far) the capacity to sustain, make possible and continuous (not necessarily in conservative static ways) the interdependencies and mutual support needed between humans and more-than-humans. To foster more just and sufficient redistribution of finite limited resources, through material ecosystems in which life develops and is renovated, while engaging with everyday challenges, vulnerabilities, and decay. ▣

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