Magical Realist Design

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ABSTRACT
We expand the critical scope of HCI by discussing features of Magical Realism, a body of literature with roots in Latin America but now global in scope. Through the discussion of our failures to treat the canon of Magical Realism as a resource for designing an augmented reality app for children we expand to consider how the world view of Magical Realist literature presents challenges for design and new critical perspectives particularly around temporality, techno-politics, and reality and presence. We conclude by discussing what a truly Magical Realist design practice might look like that resists moves to treat literature as a resource to be used preferring instead to approach it as a context of engagement.

Author Keywords
Magical Realism; literary criticism; design thinking; augmented reality.

CSS Concepts
•Human-centered computing~Interaction design~Interaction design process and methods•Human-centered computing~Interaction design~Interaction design theory, concepts and paradigms

INTRODUCTION

In HCI and interaction design, we are becoming used to the introduction of new methods, concepts and contexts to the community. We, the authors, find most pleasure and satisfaction in our design work when we recognise the rich interdisciplinary character of contemporary 'third wave' HCI research [17, 19] and observe how the incremental broadening of HCI perspectives leads to new forms of research and practice. One area that has seen substantial and varied interest is in through influence from creative writing and literary criticism [7, 9]. To DIS2020 we bring what we believe is a new example of one such influence: the body of literature collectively referred to as Magical Realism.

Zamora and Faris offer a definition of Magical Realism which summarises what are, according to them, the main elements of a Magical Realist text.

> First, the text contains an "irreducible element" of magic; second, the descriptions in magical realism detail a strong presence of the phenomenal world; third, the reader may experience some unsettling doubts in the effort to reconcile two contradictory understandings of events; fourth, the narrative merges different realms; and, finally, magical realism disturbs received ideas about time, space and identity [71].

The magic of Magical Realism is 'irreducible' in the sense that it cannot be compartmentalised or separated from everyday reality nor can it be trivialised within our understanding. Although some authors point out early antecedents for Magical Realism (Faris [32] for instance cites *Don Quixote* as an example) a reasonable (but non-comprehensive) definition starts with Latin American authors including notably Gabriel García Márquez, Isabella Allende, Juan Rulfo, and Laura Esquivel, writing from the 1960s onwards which builds on the work of authors such as Jorge Luis Borges and Alejo Carpentier, and then expands to assume a global scope. Notable non-Latin American authors to whom the label is often applied include Toni Morisson, Salman Rushdie, Haruki Murakami, Angela Carter and Ben Okri. Our interest in Magical Realist texts as an informant to HCI is founded in the challenge they present for thinking about reality, beliefs and places. We will argue that the very contradictions referred to in the quote above point to an unfamiliar approach to thinking and talking about the world which is quite different from that found in much design practice as well as in other forms of literature. We will further suggest that a close examination of the creative work and critical theory of Magical Realism is an opportunity for us to expand the outlook of HCI.

Our paper will proceed as follows. First, we will examine some existing examples of the relationships researchers have observed between creative literature, literary criticism and HCI to set the context for our work with Magical Realism. Then, we will consider for a moment how various theories and imperatives, for instance from feminist HCI, have presented a challenge to dominant paradigms of doing and conceptualising HCI. We ground our interest in Magical Realism with the introduction of a research project, based in

the UK, which explored the possibility of developing influences from Magical Realism into the design of an augmented reality (AR) app. Our reflections on some of the unresolved designs within this process leads us to examine some features of Magical Realism and the challenge they pose for doing design. Our contribution is as follows. We introduce Magical Realism as an informant to HCI asking what a *Magical Realist Design* could look like. We do this with two principal concerns in mind. First, we examine a series of shortcomings within a design process to meaningfully respond to ideas from Magical Realism and ask why that was so and what we can learn from these troubles. This leads to our second concern: on a conceptual level we consider how the worldview of much HCI practice can be fundamentally challenged by a critical encounter with Magical Realism. Engaging with these two concerns forms the contribution of this paper.

LITERARY INFLUENCES IN DESIGN

We are far from the first to consider how literature or its surrounding critical scholarship might helpfully or provocatively reframe design. Calls for a critical turn in HCI [8, 10, 11] often cite literary criticism [12] as a model that might inform critical strategies for designers seeking to analyse their work from new perspectives. Other writers have considered more general comparisons between the literary and the technical. Woolgar, for instance, introduces a notion of 'technology as text' [88] which takes a metaphor of 'writing' a new technology as a starting point for considering the organizational, social, and political circumstances that allow innovation to be possible as well as a retrospective interpretative response within which

> […] the structure and capabilities of a technological artifact can be read as embodying the form of organization within which the artifact takes shape.

Thus a view of technology as something 'written' provokes a perspective on the circumstances which allow that writing to take shape. In other work, Woolgar uses the metaphor of the user as reader to describe how users can be configured to produce 'good readings' of the technological 'text' [87].

Other work turns, as we do, to particular forms of literature in search of lessons for HCI. Wright and McCarthy discuss Mikhail Bakhtin's formulation of the 'dialogical novel' and consider its value for an account of human experience which might be helpful to design thinking [89]. Dialogical novels, according to Wright and McCarthy, emphasise characterisation over plot, the organic emergence of the narrative from the context of the novel, and the particularity of the qualitative experience of time and space. From Bakhtin's analysis Wright and McCarthy infer lessons for design including the value of strongly developed characters for scenario design, e.g. in [28], or in creating richer autobiographies to assist reflective forms of design [16].

The influence of science fiction and fantasy writing on design and HCI has become most obvious since Bleecker's formulation of design fictions in 2009 [31] but as he himself points out, earlier examples exist in other media. Indeed one of the works Bleecker cites is Dourish and Bell's discussion of a number of television sci-fi series [33]. These authors (by their own account) rather selectively thematise the series into categories including 'images of bureaucracy,' 'technological breakdown,' and 'frontier and empire' and use these as a springboard to discuss, *inter alia*, surveillance technologies of the future, power and statehood, and equality and diversity. Such work shares ground with other authors [30, 63, 64] who point out that the future orientation of sci-fi, combined with the evocative and immersive nature of storytelling (be it in Film, TV or writing) produces a rich environment to imagine the experience of living with future technologies. In recent related work, Ciolfi [29] has discussed the fantasy world of Harry Potter as a context for technological imaginings.

Other authors have described how fiction can be employed to provide a cover story for technology. In so called 'diegetic prototyping' written fictions (particularly comics, sci-fi novels or movies) present not-yet-realised technologies as a *fait accompli*. The capacity of a fictional diegesis to develop rich contexts around proposed technologies lends to their credibility with audiences [54]. Authors observe though that this fictionalising of acceptance means effectively that prototypes receive a boost past the stages of development which test their actual appropriateness for the task in hand.

Each of these individual approaches demonstrates a different set of takeaways developed by researchers in response to features of writing. Our work began with a similar orientation asking what we could learn from Magical Realism (and the critical writing surrounding it) treating it either as a challenging *topic* (application domain) or as a *resource* (a tool for thinking) for a critical HCI. Our paper proceeds mostly along these lines. In our conclusion though we will return to this quite fundamental point about the value of literary imaginaries to HCI and adopt what we think is a more radical view.

CRITICAL HCI

In recent years, HCI has developed a number of related preoccupations whose common element is that they recognise the power exercised by the creators of technology and the concomitant responsibility to acknowledge their positionality and to extend both their outlook and their methods. Initiatives recognising the embeddedness of power along particular axes include moves to a feminist HCI practice [13, 14], recognition of the role of disability in the accessibility of technology [55, 76] and forms of diversity in gender and sexuality [23, 26]. These moves draw on a history of academic work examining the functioning of power within the study of technology primarily from anthropology, sociology and Science and Technology Studies [18, 25, 32, 60, 73, 86]. Some authors have noted that such power often contains a colonial dimension [34, 36, 48, 49, 56] as decisions from 'within' are made towards creating new

worlds 'without' or 'over there,' a problem that Dourish characterises as being one of, simultaneously, ethics, pragmatics and concepts [34]. This kind of incommensurability of new epistemological perspectives to existing research scenarios is described by Harrison [47] (following Kuhn) as making *'epistemological trouble.'* It is such a state of trouble, we believe, that Magical Realism brings to the 'normal' business of interaction design and HCI. The nature of that trouble is partly in the disruption it brings to the very process of imagining the world and by extension the technologies within it. Haraway's cyborg manifesto [45] made this move in disrupting the core imaginary of technological thinking, its very mythology, with the image of the cyborg. Magical Realism offers an opportunity to reflect on a series of *otherwise situated imaginaries* and to examine how (in fiction) they play out in detail through people's lives.

WHAT IS MAGICAL REALISM?

Magical Realism is a relatively broad label applied to a corpus of literary work (it also has expressions in visual art making, including cinema, which are not discussed in our analysis). Naturally, the application of that label, the who's in and who's out so-to-speak, is the subject of significant debate. We do not have space within this paper to do these debates full justice but will instead discuss them only insofar as they highlight how even within the framing of literary criticism, quite how to approach, understand, or discuss Magical Realism is fraught with *"epistemological trouble"* [47]. Broadly speaking Magical Realism is a:

> literary mode in which equivalence is established between the code of the real and that of the magical. In this definition the real stands for the pragmatic and ordinary sense of everyday life as most people experience it and the magical is an umbrella term to denote elements drawn from mythology, fantasy, folk tales, and any other discourse that bears a representational code opposed to realism [74]

As a style Magical Realism is identifiable by its sustained use of contradiction and hyperbole, its infusion of fantasy into politics and the often intergenerational lifespans of its narratives. Most importantly, Magical Realist literature frequently deals with supernatural events as if they had a distinctly everyday character. Indeed, in Magical Realist novels it is frequently unclear whether events are unfolding in what we would commonly understand as a magical, fantastical or otherworldly setting, or in the imaginations of the protagonists and what the relationship of such worlds is to the rest of the diegetic context.

> Magic is no longer quixotic madness but normative and normalizing. It is a simple matter of the most complicated sort [71]

Some critics have noted that the very plurality of worlds present in Magical Realist texts makes the style particularly successful at exploring issues of space and place. Boundaries, liminality and the transformation of places are features of Magical Realist writing. Indeed, it was the ability of Magical Realist writing to speak from an unusual position with respect to real or imagined places that first drew our attention as designers. Additionally, Faris [37] points out that the very refusal of Magical Realist writers to adhere to rational perspectives make it apt for the production of subversive narratives. Here we find some common ground with the temporary suspension of disbelief relied on by various forms of fiction-supported design, the objects of critical design [8, 11, 35, 72] for instance or the narratives of design fictions [31]. These forms all, in different ways, exploit the license given by 'irrationality' to consider things from alternative or oblique perspectives.

Earlier we noted that, although there are some relatively unproblematic accounts of what does or does not constitute Magical Realism, some of the ruptures between definitions are indicative of epistemological problems which we think it would be productive to bring to HCI here. As a first point, Warnes [84] notes that much of the work which examines Magical Realism's interweaving of worlds does violence to the work itself by adopting a critical perspective which already assumes that reality is not fantasy, the past is not now, here is distinct from there, and so forth. In other words, the voice of the critic is often one that is incapable of dealing faithfully with the work it purports to describe.

The second piece of 'trouble' which is relevant here is the extent to which Magical Realism has been accused of performing a colonialising move itself by performing a mysticised, exoticising version of place, connecting the reader with imagined histories, places and archaeologies. Criticised by some as a *"Baroque package tour"* [71] or a *"sale-able Third Worldism"* [22]. Magical Realism has been accused of presenting a version of the other for the titillation of predominantly Western audiences.

> Magical realism is an impossible scene of emancipatory representation staged from a colonising perspective [66]

The criticism of folkloric depictions of rural Latin-America within Magical Realism was also echoed by writers of the McOndo movement in the 1990s who wanted to portray their urban realities within globalisation and move away from what they considered a European and American view of Latin American culture. Within design criticism the same colonising move is strongly taken to task by van Eeden [36] in the context of theme parks in South Africa. There, the creators of a theme park,:

> largely ignored the historical, geographical, and demographic imperatives of the land where it was sited, and constructed a fantasy landscape that encourages a distorted reading and consumption of the past [36]

Van Eeden quotes Barthes as postulating *"... that the apparatus of myth naturalizes, renders innocuous, and legitimates social constructions."* In other words, the

narrative is a florid cover story for colonial absolutism, a move also present in the colonial tendency to see the land as empty, a *tabula rasa*, onto which stories, architectures, politics or whatever can be projected. Despite these criticisms, or perhaps because of them, we see in Magical Realist literature a potential to inform the theory and methods of HCI research particularly with regards to the treatment of time and place/space in interaction design work. This is no small part due to the observation that, whatever the postcolonial critiques of the style may be, for some, Magic Realism depends on a content which betrays the overlap or the coexistence of pre-capitalist elements with nascent capitalist or technological features [52]. That is to say that the presence within Magical Realist writing of pre-capitalist social structures (be they real or imagined) and its tension with a modern technical capitalism is a topic of concern within Magical Realism and consequently may itself be a resource in HCI.

The serious consideration of Magical Realist literature then, we hope, is a way of reconsidering *"what is in practice a highly shifting and perspectival boundary"* [82] between here and there as well as the real and the imaginary. In this consideration we hope to follow Taylor's suggestion that in attending to what is notionally *"out there"* and the qualities that appear to make it so, we might gain at least some intuition as to *"our own roles in the processes of configuring [that very same] 'out there'"* [83]. This intuition was the starting point for a research project entitled *Children's Magical Realism for New Spatial Interactions*. We have already presented this project [5, 75, 77] to the ACM community and others in previous publications. We have described how we undertook a series of design workshops with children and knowledge specialists (literature academics, archivists, curators, and designer/developers) to develop an AR app (Figure 1) that embedded digitally developed versions of sketches and notes from the archive or an author of children's literature (David Almond) into a walking tour with various interactions attaching to them. Our previous work described how we designed workshops to explore features of interest pertaining to magical realist novels to inspire our designs. These organising themes arose both from our interactions with children and domain specialists through our workshops and through our own reading of Almond's work. These emphasised (among other things) the close relationship between the magical and the horrific in the exploration of space, the capacity of children to imagine the infrastructural 'background' of their environments as a site for the fantastical, and the effect that these two factors could play in dramatizing the process of exploring space. We built on these inspirations within our app design by, for instance, carefully placing objects in space and creating GUI elements to navigate towards them to build a horrific and suspenseful atmosphere.

With our contribution here though we wish to revisit the design process and examine our difficulties (or, perhaps more strongly, failures) to further our thinking about what Magical Realism could actually mean to HCI.

Figure 1. A young participant using the Magical Reality app.

MAGICAL REALISM AND INTERACTION DESIGN: FRICTIONS AND FAILURES?

In our previous work we acknowledged that the findings and outcomes described above represented only initial steps into imagining a Magical Realism infused HCI. For DIS2020 we wish to ask a different question with respect to the design process we undertook. We want to consider some of the ideas *left behind* that we felt were suggested by Magical Realism but seemed unsuitable as informants to a design process or were otherwise untranslatable into interaction ideas and to ask why that was so. During the course of our development process a number of such ideas arose and re-arose which we were unable to directly act upon within our design. The frustration of being enchanted by particular tropes, characters or scenes in the oeuvre but not being able to respond to them led us to consider that friction still more. In time, we came to the position that the incommensurability of our understanding of 'good' interaction design on the one side and the value and interest of Magical Realism on the other was not a shortcoming of ourselves as designers and developers (or at least not purely). Rather, these were indications that something more interesting was occurring, connected to our assumptions about the nature of good interaction and the affordances of technology to support it. Below we discuss some examples we hope illustrate this friction which we have organised under three loose and overlapping categories: confounding time, technology and society, and reality and presence.

Intergenerational Interactions

Novels can be long, some of them very long, and the events that happen within them still longer. In preparation for this paper the authors re-read many works of Magical Realism and enjoyed many more for the first time. In investing this long, slow time we were reminded of our ongoing interest in the often dynastic or intergenerational timescales of Magical Realist literature. We were also conscious of the experience of reading for long periods and the contrast between this and the experience of using digital technologies with what are often quick interactions. Temporality in narrative fiction has been formally analysed by many writers, for example [43].

A common distinction is made between narrative time and discourse time so as to provide an account for such narrative features as flashbacks. These phenomena provoked in us an interest in the *experience* of time as lived with Magical Realism.

During our work we were interested to explore the idea of AR objects as sites of exchange between publics at different times both during the day (for instance leaving things at dawn to 'grow' through the day) or across weeks months or years for others to encounter later. We imagined the possibility that objects might acquire a patina of age through repeated interactions that degraded or renewed them. In some discussions we considered how the objects might engage in a long dialogue with the environments around them, responding for instance to seasons, or (on a longer scale still) to the changing architectures or natural environments that surrounded them. These intuitions were partly grounded in Almond's books which draw on the industrial decline of specific areas of Newcastle upon Tyne to repopulate the landscape with fantasy. One such passage (in his novel *Heaven Eyes* [3]) is set in a deserted print works which becomes home to an unlikely group of characters who appear cast out of time seeing only glances of the 'real' world as 'ghosts' drift past the other side of the canal nearby. We spoke frequently about the experience of being situated alongside 'real' time and speculated on an object that would sit anachronistically along different timespans asking what kinds of interactional affordances it might have for different audiences. More than anything we were aware that these were questions that could be explored through interaction design work but that our methods, based mostly on speculation and imagining, were inadequate to the task. The crossing of timespans or the coexistence of one time with another were richly described in literature but difficult to describe in the language of the technologies we were using. Below we use the example of intergenerationality, the time that pertains to the transition from one generation to another, to emphasise how this leads to a series of critical effects in Magical Realism before returning to consider some implications back in design.

Perhaps the best known Magical Realist novel (although the author resisted the term, preferring 'social realism'), Gabriel García Márquez's *One Hundred Years of Solitude* [65], follows the fortunes of successive generations of the Buendía family in the fictional village of Macondo. Seven generations of the family live, work, become involved in wars and adventures and occasionally are the subject of fantastical occurrences (one person rises to the heavens wrapped in her bedsheets). Critics have observed that the long, intergenerational timespans of some Magical Realist work afford a comparison between pre-capitalist and modern forms of society.

> *One Hundred Years of Solitude*, […] seems less concerned with history per se than with a specific history detailing the process of modernization [61].

In *One Hundred Years of Solitude* one of the indicators of the passage of time is the appearance and subsequent replacement of various objects and technologies over long intergenerational timeframes. Such technologies include the 'inventions' of a group of travellers. Connell [62] points out that thematically these 'fantastic' objects (such as magnifying glasses, ice and magnets) come to be surpassed by other technologies such as the law, a technology itself which renders possible the previously unthinkable (in one case by suppressing the mention of a massacre and thus rendering it invisible).

Toni Morisson's Nobel Prize winning *Beloved* takes place in the mid-1800s as slavery is coming under attack from abolitionists. The protagonist Sethe complains:

> I got a tree on my back and a haint in my house, and nothing in between but the daughter I am holding in my arms.

The 'tree' in question is the remnant of flogging inflicted by Sethe's former slave owners while the 'haint' is the ghost of her baby daughter who violently disturbs the present. Rhetorically the 'tree' brings forward the colonial technology of the whip into the present life of her daughter in front of whom she discusses it. We observe that such ideas share some ground with notions of slow technology [44] but differ in important respects. While Hallnäs and Redström primarily focus on experiential and aesthetic factors such as reflectiveness on particular technologies in use, or the presence of time itself as a shaping factor in experience, the time of Magical Realism is sometimes foregrounded so as to provoke questions about the difference between one generation and the next, one political regime to another, my great grandmother's values and beliefs compared to mine. Other work *has* explored the notion of intergenerational exchange [53, 69] but primarily gift giving and emotional forms of message exchange. Time in Magical Realism is different in that it often has the function of affording a form of social commentary.

To us, such expressions of intergenerational politics conducted through and around technology (construed in the broadest sense) reiterate a focus on designing both sustainably and with the opportunity for change. Authors such as Bowker and Star [21, 79] have already pointed out the relevance of infrastructure as an embedded, shared, contingent resource encountered differently according to its occasion of use and built on an installed base. Our difficulty in imagining a viable interaction based on meaningful exchange over long timespans is reflective of an interaction culture based on immediacy, clarity and rationality all of which are easily commensurable with a colonial schema. Similarly, the very idea of technically designing a digital object with intergenerational legacy is almost laughable (the efforts of authors previously cited notwithstanding) in the face of the built-in obsolescence of contemporary software and hardware. Even within the lifespan of our project, breaking changes to Google's AR framework ARCore

forced weeks' worth of repair to our project app. Add to that the mutability of other social and infrastructure factors (maintaining the project server, depending on digital marketplace app support, the need for our project partners' building to remain close-by) and the challenge only deepens.

Magical Realism: Temporal Strategies

In the face of such difficulty for translating these problematics into actual approaches to doing design we wonder if the beginnings of some answers are not to be found within Magical Realist literature itself. Within the literature, objects retain intergenerational meaning by virtue of their place within a shared community (often family) mythology. For instance, in *One Hundred Years of Solitude*, a life-sized statue of Saint Joseph filled with gold coins is given to the family's matriarch by three strangers for safekeeping during a war. The gold is buried in a secret place within the Buendía house but its location is never revealed. Several generations later finding this gold becomes an obsession to one of the family's great-grandchildren, Aureliano Segundo, who hires men to dig up the house and look for the gold but never succeeds in finding it. The gold (which continues to be a subject of family rumour and preoccupation) is finally found by the town's children when the family is at the brink of extinction. The gold is variably interpreted by the different generations and its significance alters over time thanks to the changing circumstances of the family and the social and political contexts they live through. In this sense the gold serves as a lens through which we are able to focus on both immediate (the desperate poverty of the family) and contextual (the war that imperils them) circumstances.

Revisiting our original design conundrum, one response to examples like this is to attempt to translate them directly into design ideas for instance by imagining how we might design artefacts that lay hidden for generations before manifesting surprisingly for unknown family members of the future. We resist such ideas however observing how the significance of intergenerational interactions (such as those brought about by the gold) derive their very significance from their embeddedness in the life-worlds of the characters, Context which cannot be meaningfully recreated if translated out of the diegesis and into the real lives of people using technology. Instead we might legitimately ask what we *can* say or imagine to explore intergenerational time through our design choices. To do so let us return briefly to our AR app design space. We have noted already that it is almost certainly impossible to design AR objects using current tools with generational lifespans. Might we though have considered the imaginations of fictional characters who *themselves* are in the position of interpreting presences from the past (as embodied in objects and their surrounding mythologies - as with the gold) and are thus developing their own intergenerational imaginaries. The print works in *Heaven Eyes*, the ghostly baby in *Beloved* and the gold in *One Hundred Years of Solitude* all provoke complex and imaginative retrospective understanding in the characters who live with them and we, the reader, join them in this speculative move. Perhaps then a broad lesson from this temporal point is to remind us that speculation can take place with regard to the past as well as the future and to provide inspiration as to how that speculation can be supported for readers, users or audiences (Depending on one's formulation). In particular we can see from these examples how the perdurance of the various remnants from previous generations *challenges* the characters in the present time. For design then we ask if examples such as these could not provoke in us an attitude of critical imagination towards the past. As the children's presence in the abandoned printworks in *Heaven Eyes* provokes them to both imagine the site as it was and to reappraise their fixedness in their own time, can we imagine designed things that similarly cast us into a state of situated ambiguity with regard to worlds of the past, real or imagined?

Technology and Society

We discussed briefly the how intergenerational timescales can be a way of seeing the politics built into particular technologies. The figure of the brutal (whip bearing) schoolteacher in Beloved stands as a particularly unacceptable example and this character (and the technology of the whip) have been discussed [38] as representing a particular kind of political regime of the body derived from Foucault [41]. The politics of this technology are brought into the present time of the novel through the scarring of the main character's body. In short then, the scars of the whip serve as an ongoing reminder of the horrendous politics embodied in and represented by this technology.

The observation that technology bears the values of the society that produces is far from an original one [73, 86]. What Magical Realism adds though is particularly material-culturally situated commentary on the nature of change. In *One Hundred Years of Solitude* there is an ongoing political historical commentary being told through the supersession of one form of technology by another and the various characters' attempts to gain mastery of them. In particular the transition to a 'modern' society based on technologies of administration and bureaucracy is significant to the framing of those objects and related practices. Work exists which attempts to reconcile 'early' forms of technology, often cast as 'craft' with digital methods [24, 42, 50, 68, 90]. Authors observe the lack of agency experienced by some cultures in the development of technology and propose forms of hybrid practice [51, 90] as a remedy. Jacobs et al. for instance ask, *"how non-digital craft cultures can inform the design of digital tools"* before drawing reflections on *"the need find ways to incorporate these qualities back into to digital practice."* [51]. We recognize the desire to bring lessons from 'other' cultures into a more inclusive and diverse form of HCI. We are concerned also that the often tight focus on the immediate features of making practice, even when that focus is on atypical aspects of it (such as the sharing of resources in a communal making atmosphere as in the previous paper) sometimes misses a fundamental point with regard to the rhetorical role that those objects and practices

also play and the fraught politics involved in highlighting them. That is to say that is not only the specifics of the practices themselves that are significant but also their fit with longer trajectories of technology within societies.

In our belief it is not simply a question of learning lessons from a hybrid digital craft practice (however reciprocally beneficial we believe them to be) but to consider how the presencing of *strange* (in the sense of foreign to the viewer) or *estranged* (in the sense of something which has fallen out of use) objects, juxtaposed with features of familiar (to the viewer) contemporary technological life, forms an explicit form of critical commentary that might usefully inform the language of design. There is a jarring-ness to the combination of, say, circuitry and basketwork which goes beyond aesthetics to a territory where the two elements stand as witnesses to two very different technological 'texts' written for different user 'readers.' This lead us back to our design and, we hope, the design processes of others. What does Magical Realism add to design criticism and practice when others [21, 59, 80, 86] have already demonstrated, at length, how artefacts have politics? To present one answer to this question we shall return briefly to the books. *One Hundred Years of Solitude***,** demonstrates how the act of situating the same technology in different times, forms both a critic of progress *and a creative mix to explore*. In other words, this kind of knowing juxtaposition is treated *itself* as a feature of problematic, politicised critical interest which is used to explore socio-political themes and generate new speculative mashups. This argument we think is complementary, to Harrison's [47] points regarding the reflexive value of the consideration of *"right here"* as compared to *"out there."* In other words, the strange-ing of technologies, as situated in particular past world views, particular to specific places forms a strategy for comparing here and now with the then and there. The mixture of the children with their contemporary problems in the discussed print works of *Heaven Eyes* not only serve as commentary on industrial decline, it is also good creative fiction that creatives something qualitatively new but rooted in and responding to the past. This principal eluded us during our design process which focused on the insertion of AR objects into existing backgrounds. Perhaps, we now wonder, if we might have made more explicit use of juxtaposition in the design of our AR objects acknowledging more explicitly their jarringness with regard to the industrial landscapes in which they were found.

The Fantastical Familiar

Being cast outside of the 'proper' time is not the only way that objects or technologies have political force in Magical Realism. We described earlier how the *"ontological disruption"*, the rift in the way that the world 'ought' to be brought about by the presence of the fantastical or marvellous in Magical Realism gives permission for a cultural or political disruption [71]. During our design process we were interested in the possibility of drawing on this quality, particularly in the second phase of our project during which we were explicitly interested in 'strange-ing' the experience of local spaces for children as a provocation for discussion and other creative exercises, designed to encourage reflection on those spaces. In some cases we believe that we achieved some measure of that goal, particularly in instances where there was a clear connection between the AR objects we planted, and the environment around them. In one such, the presence of 'haunted' smoke (Figure 1), provided enough intrigue for children to explore it further.

Figure 2. 'Have you ever seen the dead' One of the AR objects sited along the walk in Magical Reality. Nearby are a number of relocated grave markers.

The transparent nature of the smoke revealed the environment around it which included a number of historic gravestones relocated from a former paupers' graveyard elsewhere in the city. Despite this and other examples, a more convincing use of this principle evaded us. The objects, despite our efforts, often remained as 'just' AR objects like any other. We connect this shortcoming to a failure of our process to more fully connect with specific audiences for the work. Although we engaged children and adults in co-developing knowledge about the mix of AR and Magical Realism, it overlooked the vital importance of the connection of the content itself (the digitized archive items) and the audiences who encountered it. In some ways perhaps we took a reductive view of the value of the literature to the children we worked with, some of whom were fans of the author or lived and played in the places he describes in his books. In short we ask whether our process suffered from a generalization problem as we attempted to translate specific observations about features of the archive, environment or app into features of the app that others would understand. A harsh reading of our actions here would have us guilty of a process which *"examine[s] how design can exploit or subvert the commercial allure of the exotic'"* [40]. Although the novels in the oeuvre we were referencing were written and sited locally (and the app was free) we wonder if perhaps

our abstraction of such a core feature of Magical Realism from its context (literary or historical) did not constitute itself a form of colonial *"design from nowhere*" [81]. Perhaps by focusing specifically on thematics of Magical Realism we invested *less* in the question of how a Magical Realism informed design could enable us to open up disruptive sites.

A harsh view would accuse other HCI contributions which look to other critical contexts and practices of this same error. In the search for takeaways, losing sight of the *value* is, unfortunately, easily done. Whether it is the case or not that our approach to Magical Realism was reductive in this sense, we feel motivated to ask what might be involved in more fully considering the role of the magical in Magical Realism paying deeper attention to its capacity to act as a challenge to the familiar. Below we provide some examples of this in Magical Realist literature before discussing what relevance these ideas have to design. One of the central characters in Allende's *House of the Spirits* is Clara. Clara is the youngest daughter of the del Valle family who dominate the novel. Clara exhibits a number of capabilities which we might cast as 'magical' including the capacity to see the future and to move domestic objects without touching them, particularly when distracted. These rather unusual qualities however are explained to Clara's mother, Nivea as follows [2]:

> Nana reassured her by telling her that many children fly like birds, guess other people's dreams, and speak with ghosts, but that they all outgrow it when they lose their innocence.

It is up to a woman of the previous generation (Nana) to contextualise Clara's abilities as a day-to-day affliction of children. Later in the book Clara falls mute for nine years after foretelling the death of her sister and witnessing her autopsy. Both incidents are treated comparably by Clara's family as being little more than an idiosyncrasy of the child. Concerning certainly, but not magical in the sense of being an occasion for awe or spectatorship. The rupture of the real though produced by this matter-of-fact treatment of her peculiarities supports the character's place within the family and particularly among its women. Clara is much beloved, partly on account of her strangeness, by the matriarch, Nana and later her sister-in-law who becomes infatuated with her. The 'magic' becomes a device for the narrator to create and highlight bonds and solidarity between the women of the book.

In Toni Morrison's *Beloved* [67] the ghost of Sethe's daughter violently haunts the family. Again though, the 'unreal' nature of this phenomenon is not present in the way that the events are characterized by Sethe's grandmother, Baby Suggs.

> Not a house in the country ain't packed to the rafters with some dead Negro's grief. […] Don't talk to me. You lucky. You got three left. Three pulling at your skirts and just one raising hell from the other side.

The dead baby and its disruptive but otherwise unremarkable presence in the family serves a function of highlighting the daily presence of death in the lives of black people living in conditions of first slavery and later poverty.

In both of the examples above, we see how the presence of what we as readers might consider to be magical, fantastical, marvellous or otherwise 'unreal' is characterized as part of lived experience supporting wider narrative strategies in the novels and allowing the subtle expression of socio-political points (foregrounding women's voices and interrelationships in Allende and the brutalities of slavery in Morrison.) We think there is an interesting comparison here with moves in design literature that promote a tactic of 'making by making strange' as Bell et al. [15] put it. Interestingly, Bell et al.'s proposed tactic of 'defamiliarisation' is also built on a literary background drawn from early twentieth century Russian literary criticism. Some authors [4] have even proposed haunting as a method by which to accomplish defamiliarization. Where some of such work uses the formal qualities of ghostly presence to inspire interactions we suggest that the treatment of this device (haunting) within Magical Realism differs. The treatment of the otherwise fantastical within Magical Realism runs counter to the idea of defamiliarization itself. Rather than 'making strange' Magical Realism functions by, as we put it, *making the fantastical familiar*. The very rhetorical work done by asserting the strange as the normal, we suggest, acts counterintuitively as a counterpart to the impulse to rationalize design. The notion of defamiliarization resides on the *a priori* assumption that the world as we find it represents an accepted order of things which it is our job as designers to disrupt. This is exactly the same move though that is explicitly criticized in postcolonial critiques of Magical Realism. By the phrase, *making the fantastical familiar* we call into account the assumptions about the divisions between the 'real' and the 'unreal' which we must support in order to believe that we are, 'making by making strange' or developing 'haunting' technologies.

> Traditional notions of scientific objectivity are based on a metaphor of transparent vision: truth consists of mental representations that are directly tied to and validated by natural reality.[47]

In other words, only an avowedly 'rational' perspective (with all the colonial hubris that that brings with it) decides *a priori* that Clara's visions are magical.

What then is the outcome for such a reversing move which attempts to reject such *a priori* divisions between rational and magical? In literature Ben Okri's response is to reject calls to rationalize it, preferring to pursue a course *"'beyond words', into a territory where knowledge could be constructed only through meditation on silence"* [85]. We prefer instead to suggest two strategies within the broader notion of *making the fantastical familiar*. First, we suggest that in *investigating the sites* of HCI enquiry we explicitly broaden our remit to include not only ethnographic surveys,

participatory process, speculative work responding to place and the myriad other ways HCI approaches understanding context but also to take seriously and attend in particular *to the edges of what we consider to be relevant, rational or real* as described by communities of interest. Alejo Carpentier's *The Kingdom of this World* [27] provides a good literary example for this practice. He attempts to suspend his Western views and presents the Haitian slaves' views and practice around voodoo as reality. We later learn how 'magical thinking' results in the only slave revolt to have ended in the creation of an independent state. This would suggest a more extended repertoire of methods for the investigation of places which pay serious attention to myth and ritual as legitimate methods for design practice. Creative work exists (for instance in the work of the artists Brian Howse, Aura Satz and the authors' own) which explores relationships between myth, ritual and technology for critical and creative purposes [20].We ask if such practices might become more normalised in design work and wonder what that work might look like if it were.

Second, we recommend (unsurprisingly perhaps) the value of Magical Realist fiction itself as a sensitizing platform to familiarize designers with the apparently strange. Magical Realism is not a guidebook and is not our suggestion that the bare fact of reading Orhan Pamuk's, *Istanbul* [70], for instance, would qualify designers to work sensitively within the context of that city and its history. We do wonder though why the genre has not attracted as much interest among designers as, for instance, science fiction. Could it be that the readership of sci-fi overlaps too comfortably with the demographics of HCI research (we also enjoy sci-fi) despite exceptions such as those found in Afrofuturism? Or that the underlying scientism to sci-fi gives permission to the 'right kind' of imaginings? We believe that Magical Realist literature presents a diverse challenge to HCI practice which has the potential to be at least as informative as other literary comparisons have proven.

CONCLUSIONS: INFORMING FUTURE DESIGN

In this work we have presented insights on the narrative modes of Magical Realism and touched on how these might inform interaction design. Both in our previous work and in this paper we have identified certain difficulties in implementing Magical Realist interactions. In particular, we have identified the extended historical and intergenerational timescales that Magical Realism often works with, how it intertwines its treatments of society, history and technology, and how it makes the fantastical a familiar everyday matter, as profound challenges for design work drawing on this literature. We have taken these challenges seriously and critically discussed our attempts to engage with them. What is emerging from our discussion of these issues is the view that the themes and implications of Magical Realism have a contradictory relationship with typical interaction design practice. We have seen in this comparison that even at an abstract level, ideas from Magical Realism start to provoke questions as to what 'good' design is. We believe that these tensions should not be explained or designed away but creatively deliberated on. In this final section of the paper, we wish to extrapolate the discussion and speculate a little further on what a Magical Realist HCI design practice might look like.

Design Practices

It is trivial to remark that there are many ways of doing design. Our engagement with Magical Realism has gone through a number of forms. Some of our work has concerned taking Magical Realism as the *topic* of our design work and making technologies to support children's understanding and imaginative engagement with this form of literature. In many respects, this is a traditional HCI design agenda. Children are our *users* and we have *implemented* various forms of technology (mobile technologies, AR) to create *applications* (apps). This was probably the dominant orientation of our design work towards Magical Realism in the early stages of our research. However, it became clear to us that Magical Realism is equally a *resource* for design – a set of images, preoccupations, fragments of insight and understanding. Magical Realism then becomes a source of *inspiration* for us as *designers* which can be *drawn upon* in our creative work. This is, of course, a standard designerly reorientation of HCI's concerns (insert some 'turn to design' in HCI paper here). We feel thought that there is a danger in this approach as we are selective in what gets *used* as a resource and what does not. It would be very tempting for us to author success stories showing how ideas from Magical Realism can be inspirational for design with contemporary interactive technology and downplay or ignore those aspects of Magical Realism which resist appropriation. As an extensive, developed and highly varied body of literature, we have found Magical Realism to contain themes which are not just resistive to implementation or as inspirational resources but can have a critical orientation to fundamental commitments in our design practice.

Challenges, Resistances, Frictions

Let us say a little more about this trajectory of our design work to bring out implications which, we feel, open out an exciting territory for interdisciplinary exchange.

The Objects of Society

We observed that the objects and technologies of Magical Realism offer much to tell us about the societies that bore them, not least when they are cast together in comparison. We noted that this provokes a view of technological development wherein the various elements of technical objects serve as metonyms for particular forms of society and, accordingly on this view, design becomes a metonym for making/remaking society. It is less that artefacts have 'social implications' or are themselves 'socially constructed', nor even that artefact 'have' politics, to evoke some positions in longstanding disputes about the relations between design and society [73, 86]. Metonymical relationships suggest more tangled connections. These matters are further complexified if we take seriously Magical Realism's ontology which allows, on an equal footing,

objects which are real, fantastical, imagined and so forth – an ontology which makes even the contributions to Object Oriented Ontology [46] and Actor Network Theory [57, 58] seem sober by comparison. Further elaboration of these points in either a conceptual or practical direction takes us beyond the scope of this paper. Our starting point, though, will be to reflect more on our critical remarks about mimicking haunting as an approach for design, perhaps via Mark Fisher's writings on 'the weird' and 'the eerie' [39], to enter into an expanded field for thinking about tangled, metonymic relationships.

Time, Space and Method

Earlier we suggested that our methods which were consistent with much speculative work in HCI were sometimes inadequate to the task in imagining the variable interpretation of objects of long, intergenerational or dynastic timespans. We take this point as a methodological provocation asking what combinations of ethnographic, creative or technical methods might study such interactions beyond gift giving or message exchange. We have suggested that one such a possibility lies in expanding our methods for exploring places, particularly through being attentive to encounters at the edges of what we consider to be unproblematically *there*. We suggest that more work could be done to examine our methods for investigating the presence of things out of time and add to our suggestion of Mark Fisher's work, the recommendation to look to artists such as Serena Korda [78] (and her work with ceramics, sound and ritual) as well as Howse and Satz [1, 6] who we have mentioned. All of these individuals in different ways activate the materials of different times through idiosyncratic forms of practice.

A Context of Engagement

We are conscious that we have concentrated on the positive perspectives brought by Magical Realism to design and HCI thinking but need to acknowledge that the genre itself is itself troubled (or enlivened) with debate over gender, race and other axes of diversity and politics. It is not our contention that Magical Realism offers an easy path for designers working towards a more diverse HCI or that by mimicking its style or content we will necessarily come up with better designs. The risk of producing parody is high, as is that of committing forms of appropriation. Similarly, we acknowledged that we speak from our own positions, accept that we do not speak uniquely for Magical Realism and indeed must consider carefully what we do and do not have the right to say about it. In answer to these concerns though we return to our earlier points regarding the diversity within Magical Realism itself and the different orientations design work can take. The genre should be treated not just as a topic, nor only as a resource, but notably as a *context of engagement*. With this phrase we intend to offer a distinction between a resource which is drawn upon when needed (and ignored when it is not) and a context in which one stages a multivalent exchange around cultures, history, theories, artefacts, practices. Design then becomes a meeting point for concerns – in our case, those of HCI and those of literature – where, at least in principle, many different and potential reciprocal exchanges are possible.

Nissen and Bowers [68] as part of an examination of what they call 'data things' report on a collaboration with a crochet circle in which the movement data was captured from a crochet hook as pices of crochet work were being made. The data were then visualised and printed in a variety of media. [68] reports on the mutual curiosity into each other's practices that this collaboration engendered with, for example, the craft practitioners making hybrids which combined the authors' physical-digital objects with their own crochet work. In the language of the current paper, these hybrids serve as metonyms for a context of engagement between the researchers and the crochetiers – a 'con-text' if you will, a material joining of textiles and technological texts [88]. While we have previously made some efforts in this direction in our publication with academics in literature [75], more remains to be done. We do not yet have examples of a kind of mutuality of cultural-practical exchange with Magical Realism such that the engagement has lead to new fictions. Nor do we yet have examples of hybrid material forms that express a mutual practical engagement. Our context of engagement has not yet yielded con-texts. However, we hope we have done enough to give a flavour of how a critical reorientation of the relationship between design and literature can enable us to think productively in ways which go beyond seeing one discipline as providing topics or resources for another.

A Final Word

To inform our ideas in this paper we have referred to literary criticism in Magical Realism. We have read Magical Realism and its critical literature to inform both specific design projects but also to speak to foundational issues in HCI. We have *not* been doing literary criticism ourselves. Rather we have tried to bring certain contributions to the criticism of Magical Realism into contact with HCI. We have tried to do this through a frank discussion of some of our own failures. We maintain that it is important for HCI practitioners to reach beyond their disciplinary boundaries as we did during our project to engage with other scholars. This allows thinking to go beyond how one discipline can provide topics for another or offer a set of resources which can be selectively appropriated. Future work must consider the mutual benefits of such collaboration and open out productive contexts of engagement. This will require some vulnerability and care from all participants.

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