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Back to the shed: gendered visions of technology and domesticity

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Abstract One of the tropes of the age of ubiquitous computing is the migration of computation into new spaces. Domestic environments have been a particular focus of attention for many. However, these spaces are neither empty nor neutral. They are already populated by people and practices which shape both their physical form and cultural meaning. We want to consider here some questions of technology and domesticity. In order to give some critical perspective, we want to approach domestic space from the edge, and in particular, from the shed.

1 Enter the shed

In his late 1960s, Jim lives with his wife, Sara, on their property in rural New South Wales, in eastern Australia.¹ They have about 25,000 hectares on which they run cattle and sheep, with the main house on a slight rise over-looking much of their land. About 100 m away from the house is a beaten and weathered corrugated iron shed—the old shearer’s quarters. It is a four-room building in the middle of an empty field. There is a working bathroom and kitchen. There are three other

rooms. Two are empty and the third is Jim’s home office. It is equipped with everything Jim needs. He has a desktop PC, two printers—color and laser black-and-white—a broken fax machine that he uses as a photocopier, a collection of extra bits and pieces like a video eye, headphones, cordless ear pieces and a few external hard drives. There is a cane shelf unit lined with software boxes. Wooden framed photos tell stories of city and country life; university degrees, horses and the farm. The furniture is sparse but looks worn and comfortable. The room is organized around a black potbelly stove, old single lounge chair and small black TV. He comes out there every morning to work, wearing a permanent path between the house and the shed that is visible all year round. He says, Sara only ventures into the shed once every 2 weeks with the housekeeper to clean it. For him, this is a worrying time. *“I cringe every time they come in here, because they might throw something important away”*.

The technological infrastructure of this shed is perhaps excessive, but it is, in many regards, a typical Australian shed in both function and imaging. In his remarkable compendium on all things shed-related in Australia, Mark Thomson defines the shed as follows:

In Australia a shed can be anything from a dunny²-sized construction to an aircraft hangar covering an acre or two. A shed might be defined as a building outside or away from the main domestic living space ... A garage is not a shed; it’s simply a place in which to store a car (Thompson 2002: 5).

He goes on to argue that sheds transcend class and age;

Sheds are an integral part of Australian life ... In the shed, the rules are different. Here, chaos is allowed to reign, asserting its creative force in wayward contrast to the suburban order all around (2002: 2–3).

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¹This material is drawn from InsideAsia [1]; a multi-sited ethnographic project that Bell undertook between 2001 and 2003. Australian households were compensated for their participation, and have been guaranteed privacy. Thus throughout this paper material drawn from those and other interviews and household visits is disguised through pseudonyms.

²“Dunny” is an Australian slang term for an outdoor toilet.

Fig. 1 Images of sheds in the cartoons of Michael Leunig



In the United Kingdom, writing in the new emergent genre of ‘shed science’ or ‘shedist’ literature, both Jones [3] and Thorburn [4] lay similar claim to the importance of the shed in British culture, and of its oppositional nature. Thorburn traces the genealogy of the sheds back to the Anglo-Saxon ‘scead’ or shade, a place of partial darkness and obscurity, the realm of the hermit or wise-man and the store-houses for weapons and symbolic capital (ibid: 7). This historical positioning of the shed does much to naturalize its role as a center of male power within the domestic sphere. Both Jones and Thorburn, and the British poet, John Davies (41) also bear photographic and narrative witness to the range of shed structures and their continuing popularity in the United Kingdom: in 2004, alone, a record 1.5 million sheds were sold [5].

However, for as much as sheds function as sites of particular activities, they are also a cultural form; an imaginary realm within the larger domestic expanse, and an explicit counter-point to its more central elements. Michael Leunig, a well-know Australian cartoonist, has several images of sheds in his work ([6], see Fig. 1). In one, a woman sits on a sofa in the house reading “Mode” magazine, and a man sits on a ratty chair in the shed reading “Mad” magazine; in another, two sheds stand on either side of a small winding road with a sign post that reads “Shedville, pop. 2”—a duck and a man stand disconsolate by their sheds. Significantly, these cartoons need no further explanation; that sheds are the precept of men, and that sheds always accompany homes is implicitly understood, and can thus be caricatured and quietly mocked. From this vantage point, one could suppose that sheds are a normalized part of Australian suburban (and even urban) landscape(s). Indeed sheds figure in much Australian literature and popular culture, and similarly in the cultural production of the United Kingdom. In both traditions, sheds are often imagined as the sanctuaries of hen-pecked and down-trodden men; a place for listening to Radio 4, or the ABC, for potting and planting, drinking and toiling over small projects away from the demands of family. Sheds are portrayed as the centers of social life, places for preparing food on nearby barbeques, brewing beer, shearing, making and playing music. Sheds are also constituted as a place of secrets and things best left unspoken. In all of these imaginings, there are several

constants. Sheds are physically separate from homes, but make no sense without a home nearby; they are gendered male; and they seem to operate on altered schedules from that of the home.

Of course, the shed is an extremely flexible but enduring category of domestic vernacular architecture: they can be as little as a lean-too, or as grand as a 200 m² corrugated iron structure at the bottom of Bell’s mother’s garden in rural South Australia.³ In Australia, some sheds can even be elaborate multi-room affairs—witness Jim’s four room shearer’s shed. In the United Kingdom, where homes are half the size of those in Australia and where residential patterns tend to smaller land parcels, sheds are correspondingly less grand, and might even be on land not adjacent to the home itself (e.g. allotment sheds, discussed below.) However, within the British and Australian cultural traditions, sheds also function as real and imagined sites of technology consumption and storage within the larger domestic sphere. Tinkering in the shed, for instance, is one of the principle *leitmotifs* of innovation and invention in both Australia and the UK. Thomson writing of Australian sheds notes, “Our national knack for invention and innovation, for making do, lives on in the shed. The “she’ll be right” attitude may be denigrated as the light of Australian industry, but it thrives in the country’s backyards” (Thomson 2004: 3). In some ways, one might also regard the shed as a very real staging point for technologies coming into or out of the home—it is a place for not yet domesticated technologies or for those that must forever remain feral and dangerous. Thomson, towards the end of “Blokes and Sheds,” draws an even more explicit parallel between sheds and technology. “Several of the stories,” he writes of his collection, “hint at a new future for the shed-owning type of person: the computer. The virtual shed is with us now” [2, p. 255]. Interestingly, in recent popular media coverage of the shed in Britain, there has been talk of wireless connectivity to the shed, with at least one cable company running a campaign to get so called ‘shed-heads’ on line with an IT-shed in north London [7].

³The English Heritage Trust currently lists more than 50 ‘sheds of special interest,’ and exhibits on sheds in Brighton and London’s Victoria and Albert Museum have garnered considerable interest [5], (Davies 2002, etc)

So what might the shed, both real and imagined, have to say to technologists or those engaged in the production of new information and communication technologies. If the shed is a necessary part of the British and Australian domestic landscape, the masculine counterpoint to the perceived feminization of the home, and the staging point or proving ground for technologies, where does it fit in visions of the homes of tomorrow? Indeed, what might the shed have to do with the digital home—that quintessential contemporary imagining of the technological-enabled domicile—and what might its absence imply [8]? And what might these spatial and cultural arrangements and practices in Australia and the United Kingdom have to say to the more American framed conversations around ubiquitous computing or pervasive computing? After all, the American suburban landscape is not populated with sheds, real or imagined, and garages do not have the same explicit physical disconnection from the home, nor the same imagined relationship to it. Without the presence of a shed to map those interior and exterior notions of the domestic, to provide a balancing to the living room/kitchen or great room complex [9], technology deployments for the home might be missing the point. In this paper, we want to lay claim to the shed both as metaphor and as site of technology consumption within the sphere of the domestic. In particular, we are interested in the ways in which sheds function at the edges of the domestic; their physical and potentially imagined life at the peripheries. The edgefulness of sheds might allow a very different understanding of the ‘home.’ Here the shed becomes a stand in for a wide range of domestic but not ‘home’ locations—the verandah, porch, patio, stoop, mudroom, nature-strip, front yard, back yard, deck. We are not suggesting a fundamental or wholesale rejection of the living room or other center points [10], but rather for an opening up of the discussion of home to include these peripheries and edges.

We argue that sheds have an epistemic authority vis-a-vis the home and thus represent an important starting point in any conversation about the nature of domesticity. Critical standpoint theory (including both feminist and Marxist articulations; see [11–14]) attributes epistemic privilege or authority based on a particular socially and culturally grounded perspective. In this theoretical construct, one’s location as a social actor can mean a more or less acute understanding of larger social forces; that is, workers based on their experience as laborers have an acute, thus privileged, understanding of economics; women operating under patriarchy have a privileged understanding of gender in particular and society more generally. Standpoint theory is careful not to attribute this privilege or authority to any essential nature of laborers or women, but rather to their lived experiences within larger systems of cultural production. Using (or inspired by) this theoretical lens, here we suggest that it is the very marginal nature of the shed, and its existence on the peripheries of domestic that make it an ideal location from which to re-examine the

‘home,’ its technological infrastructure, gendered divisions and ultimately also its boundaries. We may gain more insight into the digital home by thinking about its edges rather than its centers. Our approach, then, is related to but distinct from the “extreme personas” employed by Djajadiningrat et al. [15], since marginality is crucial to our approach.

Writing as US-based technologists, one in Long Beach, California, the other in Forest Grove, Oregon, we are both currently without sheds. However, as children of the former British Empire, growing up in Glasgow and small and large Australian towns, we were both raised around shed-culture; Dourish without a shed, but with a fascination of the small wooden garden shed next door with a smell of dirt that is not forgotten some thirty years later, and Bell with a range of sheds including those in which her grandfather brewed beer, her father tinkered with steam engines, and her mother now keeps a life-time’s worth of academic documents and papers. She also has the blue-prints for a shed that will some day rise behind her very American salt-box dwelling. We also draw on our disciplinary backgrounds and current locations as computer scientist within the academy and anthropologist within industry to approach the shed as a productive site of intellectual inquiry.

2 What goes on in the shed: the shed as lens

What we want to do here, then, is to use the shed as a lens through which to scrutinize the conceptual frames within which technical conceptions of domesticity are situated. The shed is both part of the home and separated from it; as such, the distinction between shed and home draws attention to a series of otherwise unstated assumptions about the nature of homes and domestic life. Exploring the role of the shed helps to unpack some of these assumptions. This is not a project about putting men back into the discussion of the home per se—that is ongoing elsewhere—nor is it about a celebration of paeans of British and Australian masculinity. Rather we are interested in scrutinizing the home as an imagined and real site of masculinity that is in turn not mapped onto established sites of public productivity (i.e., paid work and labor) or authority.

In this section, we will examine a range of properties associated with the shed; in the next section, we will return to the broader question of domesticity in light of these explorations.

2.1 Gender

Perhaps the overriding feature of the shed as a cultural form is its gender orientation. Despite the rapid acceleration of female-controlled sheds in Britain [5] and the interest in ‘Sheila sheds’ in Australia (D. Bell, personal communication), the shed remains a thoroughly and

quintessentially masculine space. It is a site of male habitation and practice, and many of the other elements that we will discuss with respect to sheds and domestic spaces—the association of sheds with tinkering, with danger, with dirt, etc—are strongly gendered too. The shed, in this view, cannot be taken as an object in itself, but rather is enmeshed in a range of cultural oppositions that give it meaning. The shed is a primitive place with its deep, almost primal roots [4]; indeed, the very nature of its primitive form, from its construction to its contents, is one that helps to mark a range of domestic practice as female. In other words, sheds are sites for demonstrations and celebrations of certain forms of masculinity (that are, themselves, as stereotyped and culturally determined as the manifestations of femininity against which they are ranged.) The pairing of “blokes and sheds” [2], then, is fundamental to the interpretation of sheds in relation to other domestic spaces. The shed is male space precisely because domestic space is largely read as female. The shed is a place where unfettered hyper-masculinity rules the day, and indeed to which masculinity may be exiled (see “refuge” below.) Similarly, those objects and practices contained within sheds are equally male. In his remarkable short story, the rough shed, the early Australian writer Henry Lawson offers this piercing articulation of the maleness of the shed, in this case, a shearing shed. The sole protagonist and narrator is reflecting on life in the shed: “That’s the way of it. If I went back to a woman’s country again I wouldn’t swear. I’d forget this as I would a nightmare. That’s the way of it. There’s something of the larrikin about us. We don’t exist individually. Off the board, away from the shed (and each other) we are quiet—even gentle” [16].⁴ There the shed is seen not only as masculine, but as collective and aggressive and distinctly apart from women’s domains.

2.2 Home and safety

As suggested above, one way in which the gendered nature of the shed is worked out is in terms of the dangers associated with it. Typically, the shed houses a range of objects and substances that might maim, injure, or kill—

Danger lurks. Hidden in rough painted cupboards are forbidden chemicals. Rusting nails lie scattered around on the floor, ready to pierce unprotected feet. Screeching power tools send sparks flying. Risk and thrills are everywhere (Thompson 2002: 2).

The shed is the place where one might encounter rat poison, weed killer, acids, sharp blades, unprotected

machinery, and live wires. The shed is, also, the place where these objects might be piled up precariously, dangled from hooks, kept in unlabeled boxes and bottles, and generally stored in flagrant disregard of tame, conventional safety procedures.

In the British lived experience, the shed is site of actual, as well as perceived danger. The Royal Society for the Prevention of Accidents (RSOPA) tracks household and leisure accidents and makes them available to the public in annual reports on its website [17]. In 2002, the last year for which data is available, there were more than 36,000 accidents that culminated in visits to emergency rooms that happened in garages, greenhouses, tool/potting/coal/etc shed/outbuildings combined. Whilst this number pales by comparison to the number of accidents in the kitchen for instance (261,949) or in the bathroom/toilet (94,854), and is only a small percentage of the population (60 M), it still signals a source of realized dangers.

The association of danger with the shed depends on the relationship between the shed and other domestic spaces [18]. The shed is the place to which those objects too dangerous to keep in the house are exiled. The purity of the house depends on the containment of dangers in the shed—which in turn seems to rely on rusted locks and aging padlocks. The shed is not only a container for dangerous objects, but also a place for dangerous practices. Indeed, and in-keeping with the hyper-masculinity alluded to above, the shed is a place where dangerous practice is celebrated and ritually performed. Bottles of beer and bottles of rat poison sit side by side precisely because of the danger that is implied; knives, saws, and drills are scattered around and become playthings for children. The shed is not a place for safety goggles; the shed is a place to “get things done,” and the fact that one might be continually in danger of losing a finger or an eye is part and parcel of the process.

Of course, the association of danger with male spaces is not unique to this particular sort of practice, but is a common observation in anthropological work [19, 20]. The ritual divisions between male space and female space are frequently maintained through the invocation of dangers associated with female presence in male space. It is, arguably this highly ritualized division that propelled reports of Sharon Thomas, a Welsh woman accused of running an international pornography ring, onto the front pages of the newspapers in 2000—after all she was keeping it in the garden shed [21, 22]. The outrage seems to be directed as much at her misappropriation of the shed as at any other illegality or immorality.]

2.3 Refuge

A second important feature of the gendered nature of the shed—particularly as it appears in fictional and literary accounts—is the shed as a place of male refuge from the house and from the family. The shed, in these accounts, is not merely a place for male work, but more

⁴Of course, shearing sheds—the objects of Lawson’s reflection—occupy a very particular space in Australian culture and history. Early unionization efforts were directing at shearing sheds and their shearers.

general a place for male isolation—a place for watching cricket, for smoking a pipe, for drinking, for sleeping, for quiet contemplation, but above all for escape. In this view, the space of the shed is not simply “male” but more distinctly “not female” and becomes a space in which the feminine can be excluded. Not surprising, in Britain, female interest in owning and occupying sheds engenders alarm [4, 5]; whilst in Australia, the notion of the ‘shed’ is being now used as part of a public health initiative targeting high suicide rates amongst men in rural areas [21, also <http://www.mensheds.com.au>]. A converted railway goods shed in Grenfell, rural New South Wales, was the first such ‘Men’s Shed’ where “guys meet other blokes, share a cuppa, have a yarn and when they unburden themselves they realize they’re not the only one facing hardship ... The idea of the Men’s shed is a form of therapy, helping scores of men, 90% of whom have suffered some form of serious trauma in their lives, to be healed and come to a better place mentally” [23].

If the shed is a place of danger as explored above, in terms of the activities, objects, and substances that it contains, it might also, in terms of refuge, be seen as a place of safety and comfort. It is a zone in which male pleasures will not be questioned, and in which a range of social norms and niceties might be relaxed or ignored altogether. It is a place where these activities do not seek female approbation, and so do not risk female disapproval. Again, this is a way in which the shed takes its meaning from the series of cultural tensions within which it is embedded and of which it is deeply reflective. The figure of shed as refuge immediately raises the questions “refuge from what?” and “why?” and focuses our attention again on other domestic spaces in different ways.

The separation between the space of the shed and the space of the house is perhaps even more marked in the British tradition, where sheds have historically be found on allotments—small plots of land rented out by local authorities to individuals for raising vegetables for domestic consumption. The typical allotment renter was someone who lives in a small house or apartment with no garden space of its own; allotments are centrally located on land controlled by the local authority and therefore physically separated from the home. The allotment is one of the natural habitats of the British shed, and its physical separation from the home only serves to emphasize its cultural and gender separation, and the notion of refuge that undergirds the movement from home to shed. According to Langley [5], however, “allotments ... have been disappearing at a terrifying rate as councils requisition the land for housing developments.”

2.4 Migration of technology

The location of the shed on the edge of the domestic sphere also focuses our attention on the ways in which

the shed provides a space through which objects move on their way into and out of the home—a liminal space, if you will, maintained on the threshold of the domestic but where a different set of values and concerns hold sway. In their discussion of the notion of the “accidentally smart home,” Edwards and Grinter [24] draw attention not just to technologies within the home, but to the manner and circumstances under which they come to be there. Sheds have a role here as spaces through which technologies move both into and, more commonly, out of domestic space.

The shed is often a place where junk accumulates—one of the characteristic images is of the accumulation of materials that have outlived their original purpose, but which are kept around in case a need some day arises. In this sense, then, the shed accumulates objects that are often derelict, discarded, or defective—objects with “spoiled identities” [25].

Since tinkering and “light engineering” are primary activities in the shed, defective technologies frequently move to the shed in order to be repaired. But since, too, the aesthetic of the shed is that of the bricoleur, the shed is also a place where old technologies are cobbled together, given new life, or pressed into marginal service. It functions, then, as a channel by which materials move out of the house but not entirely out of the domestic sphere.

By the same token, the shed may be also be a staging post in the movement of technologies into the home—a place where technologies and materials are, quite literally, domesticated and transformed to meet the needs of the home. Woodwork and metalcraft are iconic activities associated with sheds and, frequently, the products of these activities are intended for domestic consumption. The shed, then, figures in both the inward and outward migration of domestic technologies, and is a critical staging post within their larger trajectories. Part of the domestic sphere but separated from other domestic spaces, the shed safely contains technologies not quite ready for the home itself or past their usefulness. (Indeed, this sense that what fits in the shed doesn’t quite fit in the home may, itself, reflect a male attitude towards their own discomfort in those spaces and tendency to mark themselves as marginal there.)

2.5 Sheds as chaotic spaces

One image that frequently occurs in descriptions of sheds is of a loosely-ordered chaos. Sheds are messy spaces. The shed is a home for junk of all sorts, for assorted odds and ends, and for objects that are otherwise homeless. Sheds are inherently disordered. By the same token, when nothing has a place then nothing can be out of place, and the shed is invariably a site of unexpected juxtapositions and combinations of objects and activities. In *men and sheds*, Thorburn writes that

things accumulate in sheds, originally wanted then forgotten and much later resurrected as momentous mementoes (2002: 11).

The image of the shed is one of a space piled up with building supplies, gardening supplies, tools, spare parts, offcuts, household and industrial junk, left-over cans of paint, assorted screws, nuts, and bolts, disassembled or half-assembled machinery, and almost anything else.

Again, the significance of this disorder can be seen in relation to more ordered space of the home. Not only are homes, as public spaces, ones associated with the maintenance of particular kinds of order, but the home as a multi-room dwelling allows for a segregation of activity between different kinds of spaces (rooms for eating, for cooking, for sleeping, for socializing, etc.). Sheds are most often single rooms, for instance; there can be no segregation of activities or artifacts in such a space. Indeed, the shed is resistant to such notions of order and accountability.

2.6 Sheds as secret spaces

Finally, here, another product of this separation between shed space and domestic space, between male space and female space, between dangerous space and safe space, is a separation between private and public. The shed is, to some extent, a space of secrets. Sheds are mysterious sites. To children, they are mysterious places from which they are largely excluded (so that, for example, to be granted rights to enter and use the space becomes a rite of passage.) Indeed, Thorburn describes the contents of the shed as assemblage of many things, some with magical significance ([4], p. 7)—his evocation of the hermit/oracle as the shed’s ancestral inhabitant reinforces this lineage. In literature and fiction, the shed is often associated with secrets. Ada Doom of *Cold Comfort Farm* [26] repeatedly and ominously intones that she “saw something nasty in the woodshed,” something that has profoundly touched her life and that of her family; in the recent British film *Shaun of the Dead* [27], the shed becomes the final resting place of Shaun’s best friend and remaining zombie where he can be imprisoned for his own good with a television to keep him company. Like the attic, the shed is a place where people, objects, and actions can be shut away from prying eyes and kept hidden from view. To paraphrase wildly, what happens in the shed, stays in the shed.

3 After the shed?

Where does this exploration leave us? What might these elaborations of the secret lives of sheds have to tell us about ubiquitous computing?

A central trope of ubiquitous computing is that computation is moving “off the desktop.” However, while this oft-repeated phrase tells us something of where computation has been, it tells us little about the spaces into which computation might be moving. The move “off the desktop” has resulted in a proliferation of new spaces into which computation has been displaced, manifesting itself as research concerns with technology and play, with urban computing, and with computing in the home. Domestic environments have been a major focus of research attention for the ubiquitous computing community, as evidenced by any number of papers exploring the potential of “smart space” technologies [28], advanced entertainment systems, group communication technologies [29], augmented refrigerators and refrigerator magnets [30], etc.

Ironically enough, the “home of tomorrow” is an old idea [31], and, like much science fiction, tends to owe more to our conceptions of the present than it does to likely futures. In using sheds as a vantage point from which to examine the ubiquitous home, what we hope to understand is the ways in which those images of future applications of ubiquitous computing technologies to domestic spaces can tell us about the ways in which contemporary domesticity is understood. What we find problematic about some of this work is that the image of the home as a physical space overwhelms or obscures the notion of the home as a social category. We feel that any effective consideration of technologies for the home must be situated within understandings of the domestic as a form of cultural practice. In order to understand the domestic, we need to see how it is culturally produced and enacted in everyday practice, and how it emerges at a nexus of related concerns—around public and private, around work life and family life, around children and relatives, around responsibility and freedom, etc. In other words, in understanding the home, what we turn our attention to is the way in which a domestic sphere can be distinguished from and articulated in relation to other forms of living and aspects of everyday life. Rather than assuming that the category of the domestic is pre-given and stable, we need to look at the ways in which it is actively produced.

For this reason, our methodological approach has been to focus on the edges and boundaries of the home—on how they are maintained, and on how objects, people, and activities move across them. The edges are where the questions of the home are more contested and most visible, and places where we might inquire into such considerations as what constitutes home, family, and domesticity in the first place. As we have suggested, the shed occupies this border region, both spatially and conceptually. It is at the fringe of the domestic sphere. It partakes of the home, but is also separate from it, and the segregation of activities, objects, and people between home and shed reflects a broader set of processes by which the boundaries of the home are maintained. What the shed provides, then, is a standpoint from which to re-examine the home.

What do we see when we look at the home from the shed? Many of the primary considerations are ones that we have prefigured in the ways in which we have introduced and problematized sheds in the first place, but let us recapitulate them here with a focus on home rather than shed.

How things move in and out As others have noted, technologies do not simply appear in the home; they must be brought in, and they must be domesticated. Similarly, the movement of technologies out of the home is also one for which a range of trajectories can be articulated. For instance, and particularly in the case of expensive information technologies, replaced or discarded pieces of kit typically find their way not to the dustbin but rather into other homes—homes of friends, parents, relatives, and so on. Hand-me-down technologies create gradients of sophistication which often reproduce patterns of central and peripheral socioeconomic status. When thinking of how technologies move into and out of the home, then, what we see being produced are networks of homes and broader domestic spheres within which technologies are traded, and ways in which social ties are maintained by this circulation of technological goods [32].

Gender and technology One of the most surprising omissions from research on ubiquitous computing in domestic space is the question of gender and technology. The history of domestic technologies is a history of gender relations in the home [33]. The introduction of vacuum cleaners, for example, turned carpet cleaning from a male task into a female one; and similarly, advances in cooking and washing technologies, far from being “labor saving,” served instead to transform expectations about culinary complexity and standards of cleanliness. In addition to thinking about how technologies move into and out of the home, then, one must also ask who brings them in, how they arrive, by what mechanisms they are domesticated, and what kinds of power displacements they achieve. For example, Rode et al. [34] look at a range of programmable technologies in the home—not just computers, but VCRs, washing machines, and ovens, amongst others—to question who programs what, and why. Perhaps unsurprisingly, what they find is a significant gender division in when people program, why they program, and what they program. When technologies are introduced into the home, they are introduced into gendered spaces, and they bring with them certain expectations about gender relationships. “The family” is both an inadequate unit of analysis and an inappropriate conceptual apparatus for understanding these questions.

Safety and danger Homes frequently figured in ubiquitous computing technologies as safe places. Whereas research into urban computing frequently paints urban

spaces as dangerous places to be either navigated quickly or in which you might want to be able to locate friends (and potential friends) amongst a host of hostile strangers, technologies of the home are ones that celebrate togetherness, warmth, and nurture. Technologies of the home are ones that promote sharing and togetherness [35], recording and revisiting special moments and celebrations [36], or play and entertainment [28]. At the same time, though, statistics show that homes are far from safe places. In 2003, in Australia, 24% of males and 47% of females indicating that the home was the site of their most recent assaults with more than half knowing their attacker [37]; in the case of sexual assaults the figures are even more telling: 86% of the victims of sexual assaults were women, 93% of the offenders were male. Forty percent of assaults took place in the victim’s own or another home. In over half (58%) of the most recent incidents of female sexual assault, the offender was known to the victim. The home is a dangerous place [37].

Boundaries and separations Finally, rather than thinking about homes from the inside out, we find some value in thinking about them from the outside in. Whereas most inquiries into domestic ubiquitous computing think about uniform access within the home, centered on such spaces as living rooms and kitchens, we want to think rather about the spaces where homes butt up against each other, and where the boundaries must be maintained. Wireless networking technologies, with their implicit assumptions about the size and shape of residences, are one natural place where this concern with boundaries manifests itself; many technology adopters have stories to tell about interference between their own wireless devices and those of their neighbors, for example, and these problems manifest themselves very differently in different countries with different forms of domestic infrastructure [38].

Tinkering and technology Despite the rhetoric of technology, tinkering, and end-user programming of advanced technology in the home, it is notable that these activities are associated not with the home itself but with the marginal space of the shed. Again, Rode et al.’s [34] study points to a gender separation between different forms of programming and its different purposes. What we find particularly interesting here though is the ways in which gender differences are reflected also in spatial segregations. Messing around with the technology—programming, tweaking, transforming, “opening it up” and “playing around”—are activities traditionally separated from the central spaces of the home, and which indeed are akin to “work” rather than to the domestic routine. Programming information systems realigns our relationships to it and the ways in which it can be embedded in domestic routines. The activities of the shed suggest that these transformations, for many technologies, are associated with explicit movement of

both artifacts and actions—a movement of the technology out of the home and an explicit process of re-introduction and reintegration later. While, for many technologies, programmability is “feature” designed to encourage forms of domestic integration [36, 39], the view from the shed suggests that programming may well be incompatible with other forms of domestic practice, or at the very least that it implies certain patterns of ownership and control that need to be very carefully thought through.

4 Conclusions

In recent years, ubiquitous computing has been interested in domestic environments as sites for encounters between people and technology, and fruitful domains for design. In much of this work, though “domestic” is used largely as a taxonomic category for spaces, to distinguish them from those spaces that might otherwise be labeled as public, civic, workplace, commercial, or whatever. By contrast, we want to understand the cultural nature of the “domestic” itself—how domesticity is managed and produced. So we are interested in the social and cultural organization of domestic spaces, and the nature of domesticity as a social imaginary [40].

One approach is to think about the center of the domestic—the concepts and spaces that are intrinsic to contemporary discourses about domesticity and home. The alternative approach that we have taken here is to explore these questions from the outside, and to look at the ways in which the boundaries are policed. What we find, then, is that the shed is a useful conceptual device for reframing technological discourse about the home. It serves this role not because of its centrality to the domestic sphere, but precisely because of its marginal position. Environmental conditions mean that the shed takes on quite different physical forms in Australian and British domestic life, and yet it plays similar cultural roles. Australian and British sheds look quite different, house different artifacts, sit in different places, have different symbolic import, etc. At the same time, though, they have much in common—not so much as artifacts in their own right, but in terms of their positionalities within domestic ecosystems. They may speak in different accents, but they have similar things to tell us about the homes in relation to which they are arranged.

The position of the shed in the hinterlands of the domestic casts new light on the elements of domestic life that typically occupy design attention in ubiquitous computing. In particular, it forces us to consider what sorts of margins surround the home, and in turn foregrounds a series of otherwise unstated assumptions about the home and its borders—physical borders, group borders, practice borders, conceptual borders, etc. The home, undoubtedly, remains a fascinating site of investigation and opportunity for novel ubiquitous computing technology, and much work remains to be

done that takes the domestic as its central figure. Meantime, though, we’ll be in the shed.

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