

Design notes on a lonely drone

Andrew Morrison , Ragnhild Tronstad & Einar Sneve Martinussen

To cite this article: Andrew Morrison , Ragnhild Tronstad & Einar Sneve Martinussen (2013) Design notes on a lonely drone, Digital Creativity, 24:1, 46-59, DOI: [10.1080/14626268.2013.768534](https://doi.org/10.1080/14626268.2013.768534)

To link to this article: <https://doi.org/10.1080/14626268.2013.768534>



Published online: 09 May 2013.



Submit your article to this journal [↗](#)



Article views: 736



Citing articles: 5 [View citing articles](#) [↗](#)

Design notes on a lonely drone

Andrew Morrison, Ragnhild Tronstad and Einar Sneve Martinussen

Institute of Design, Oslo School of Architecture and Design

andrew.morrison@aho.no; ragnhild.tronstad@aho.no;
einar.snevemartinussen@aho.no

Abstract

Design fictions present us with spaces for construction and reflection, potentially mixing various modes of the emergent and the speculative with the shaping and communication of near future imaginaries. In this article we adopt a blend of rhetorical devices to present and discuss design fictions. We do this by referring to current discourses around drone technologies. We resituate these in the context of the networked city and the projection of a hybrid rogue drone. She is dissatisfied with her given functions and begins to question her deployment in urban policing. The article is based in the conceptual end of designing such a future city space. It refers to practical, popular and academic materials and citations to argue for the need for openness and clarity at the ideational end of developing design fictions. The text is part of a wider developmental and reflexive design–research process that takes up the speculative in design fictions and related hermeneutic design research.

Keywords: design fiction, drones, speculative, networked city, hermeneutic design research

1 Context

NOTE 38742 / Peeper Drone # 229: 23h06

*They write me now to sky
Code to my rotors
Drawing design
For spliced urban eye.*

*Adrona I'm named
Designed to watch
I'm sentient too
And dictionary tamed.*

*Day's sunny noise
My hovering absorbs
Human body tracker tools
Readied now in lofty nimble poise.*

1.1 Irruptive inquiry

Last week this short text fitted fictionally across an iPad screen three teenage girls were using in downtown Oslo. Searching for updates on the latest games apps, they'd stumbled across links for commercially available drones or unmanned aerial vehicles (UAVs). They noticed the operators of these mostly military aircraft—sitting in shrouded rooms far from their targets or surveillance zones—were almost always men. They looked at each other in amazement. The voice of



Figure 1. Material from design fiction archive on archaeology of the future. 'Drone shadow': full scale outline of Predator drone, chalk on tar, London, UK, 2011. © 2012 Einar Sneve Martinussen and James Bridle.

an *unmanned* drone fleeting through the ether. Slate flat webspace before them suddenly alive with unrequested *poetry*.

In this article we make apparent some of the non-linear and irruptive creative aspects of the early conceptual and ideational phase of developing a design fiction called *Wi-Fly*. This work is intended to problematise key issues around play, speculation and mobility in the city. It takes the drone, currently an airborne medium of surveillance and combat, and transposes it into a fictional near future urban setting. It does this to raise questions about such tools and technologies but also to nudge us towards a critical stance about how to develop a design fiction centred on point of view, voice and anthropomorphic identity in the networked city. The design, then, is technical and communicative, together with a measure of artistic and fictional expression.

Our article takes up the conceptual phase of design: we are interested in the thinking about designing design fictions that open out the unscripted, unfolding and emergent nature of identifying and gathering resources that prompt and suggest directions a design fiction work might take (Morrison & Mainsah 2012). We focus on the level of ideation; the status of the inquiry is about finding a design bearing or orientation.

This takes the form of seeking out the qualities, characteristics and voice of an urban drone. It asks that we investigate a variety of current sources on drones, their technical properties and their extended contexts of application. The longer iterative design processes around scripting, sketching, storyboarding, compositing and programming *Wi-Fly* will be covered in a subsequent article that examines the composition and communication of the resulting mediated mobile work.

It is important, we argue, to concentrate on the conceptual phase of developing irruptive takes on the near future city, as there is the danger that design fictions follow linear, procedural and, at times, programmatic routes to realising actual works. They may too readily be influenced by notions and practices of designing to do with arriving at solutions to problems and less about ways to find ways into creative, reflexive and critical expression. Currently, much of the research-related writings on design fiction gloss over the nature of designing and the hazy hunches and inescapable resonances that arrive in our minds, sketches and discussions as we go about working out how to generate what is not yet there but must be activated. Our intention, then, is to highlight how understanding of how to conceptualise design fictions may be elaborated from inside

design as a mesh and ‘mash-up’ of wrangling, meandering and, indeed, even lollygagging, not simply following procedural formats and given directionality. This means we need to engage in slippery abductive turns in a mix of discoveries and revisions of earlier knowledge and expectations. Our text, therefore, is an instance of an experimental research rhetoric in which poetry, photographs and written text themselves are cross-stitched.

1.2 On *Wi-Fly*

We have been working on the design fiction *Wi-Fly* for a little over a year now. *Wi-Fly* is cast at the outset as a critical, creative and performatively centred design construction that takes up a fast-emerging feature of today’s mobile technologies and communication and relates it to a near-future urban setting. *Wi-Fly* is broadly a GPS locative media narrative work. It concerns the perspectives of a drone that has been enhanced with elements of human female genes to augment its aerobotic surveillance and mapping functions in a Nordic capital city. The narrative is projected to take the form of short scenarios that are served in a mix of media in the year 2020.

Implicit in the title *Wi-Fly* are several questions. First, most obviously, is why drones are put to their current uses in combat zones and what this implies about the changing character of technologies of surveillance, mapping and geo-politics, ones that design clearly has had a hand in shaping (see e.g. Crandall 2011). Second, the title points to matters of how wireless and sensing technologies are part of the extended urban techno-mediated fabric of the networked and sentient city (e.g. Bell and Dourish 2011). Third, more implicitly, is allusion to the motivations of developing a wireless and an airborne work that takes the materials of invisible ubiquitous computing technologies and small biomimetic craft as its design focus and relates these to urban settings and public imagination. What, then, does Adrona, as an interruptive voice, articulate? How might we conceptualise her presence and activities as a form of rogue drone as a means to reflexively pose questions back to our current locations, mediated practices and daily pathways in the networked city? What potential is there,

then, for design fiction to ‘constructively’ engage in the discourses and expectations of mobile locative technologies and social media practices in urban settings?

1.3 Research rhetoric and overview

Three main sections make up the article that now follows. First, in the section entitled ‘Criticality’, we enact an experimental research rhetoric. This is akin to the approach adopted by Mazé and Redström (2009) in deliberately engaging with ‘difficult forms’ as part of critical practices of design and research (Seago and Dunne 1999). It is fashioned to make apparent aspects of the design, speculation and reflexivity in communicating research on design fictions. We do this because the current article is not a *post-facto* account of a linear design process. It is cast in a heterogeneous frame (Law 2004) and polyvocal mode of address (Bakhtin 1981) to convey a mix of issues, creative and critical directions (Ericson & Mazé 2012), mediated materials and design connected to locative media, technology and urban settings. This account concerns the level of ideation and conceptual design of the design fiction work; it is not an analysis of a design process subsequent to co-designing.

The text is part of a wider view on making and critically analysing and communicating design artefacts and processes that we term *discursive design*:

For us . . . Discursive Design is at the same time dynamic and transformational. Yet it is speculative and communicative. It moves out of the lab, field and gallery and into design spaces and spaces for design experimentation. This is something that matters for engaging with new tools and technologies and their impact on our practices and analysis. Morrison et al. 2011, 4

In contrast to typical humanities research that examines texts retrospectively, design research such as that we offer here may also be characterised by what we call a *prospective hermeneutics*. Such a forward-reaching inquiry works with ideation, abduction and projection, drawing on current contexts, issues and technologies to anticipate and

speculate, and not only examine compositions already enacted. It is to see UAV technologies not merely as search-and-rescue ‘fixed-wing’ operations, but as modes for looking into, and culturally and discursively prospecting, potentials and design futures.

In order to convey this status of our speculative inquiry in and as design fiction, the account is also deliberately performative in character: it invites the reader to shift between fictional mode, contexts of creation and communication and layers of situated and abductive argumentation that draw on published research and web-based resources. This rhetorical design, we argue, is also important in unravelling the seemingly intricate and, at times, necessarily imprecise nature of conceptualising design fictions where what is involved is not merely boundary crossing between disciplines and practices, but the need for a mode of description with explanation (see Law 2011).

This is a technique we have employed elsewhere to devise a textual dynamic between presentation and critique of existing technologies and points of view from future scenarios articulated via a sentient character (Morrison 2011). The section moves between the voice of the drone as already mentioned and research text that centres on key design and cultural issues in speculating about airborne technologies and media in the future city (see e.g. Sterling 2002; Galloway 2004, 2010; Benford et al. 2010). The shifts between fictional and expository discourse draw on other research writings that are rhetorically designed. These include: fictional narratives—verbal and pictorial—as a way of discussing speculation and the built environment (Gadano and Sterling 2009); ‘geographies of writing’ (Reynolds 2003); a multi-voiced narrative rich in documentation that recounts the demise of a projected public works project (Latour 1996); and a visual online essay that uses filmic material as part of wider mediational mode of discursive design inquiry (Arnall and Martinussen 2010). In this text we extend these as a *poetic* move—as construction and via poetry and expository text—within a wider prospective hermeneutics.

Second, in the section entitled ‘Reflections’, we shift style to typical formal discussion. From the *Wi-Fly* work we draw forth three main items for further consideration. This section aims to stretch beyond the particular heuristic case we have developed so to offer selected reflections on ways design fictions may be taken up analytically. Third, in a short ‘Conclusion’, we re-address some of the main research writings in design fictions in relation to the material we offer. We suggest that there is space for further elaboration of design fictioning as a type of design inquiry.

2 Criticality

2.1 Motivations

NOTE 47997 / Peeper Drone # 229: 14h39

A distant feeling is here.

A variation on remote sensing!

A feeble keening all of my own

*Suspended with my rotors spinning at
279.23 m.*

Alone.

Watching and following.

My zone given.

Separated.

Active.

Pre-primed.

But alone.

Alone in a swarm of drones.

As part of investigating the terrain for developing *Wi-Fly* we came across images such as those from San Diego Air and Space Museum Archives available on the photo-sharing site Flickr (<http://www.flickr.com/photos/sdasmarchives/6871003163/>). Much of our inquiry has been to do with becoming familiar with drone technologies and discourses (e.g. Blackmore 2005), verbal and visual, and their spread from combat to public urban spaces. We have bought a commercial toy drone and learned how to fly it and see from its perspectives as they are saved to its iPhone controller. We have tried to empathise with the

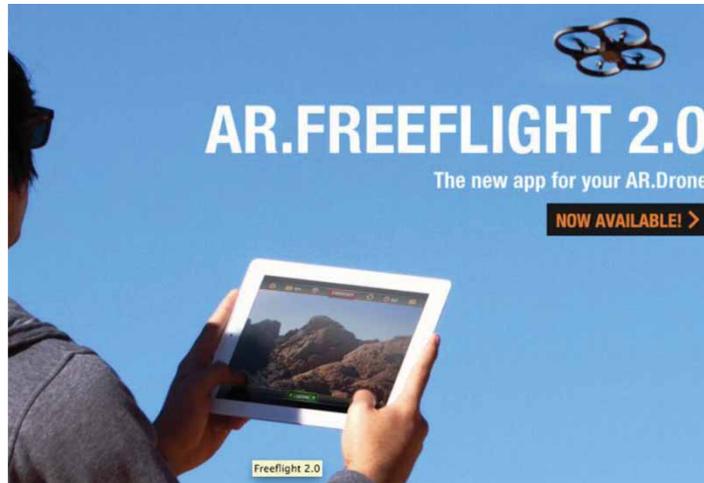


Figure 2. Material from design fiction archive on archaeology of the future. Screen grab of promotion of app. © 2012 Parrot SA. Reproduced with permission.

persona of an animated hybrid craft in future time over the city. This led us to writing poetic pieces to try to find a voice, and to think ahead into the role of voice-over in animated material that may be included in mobile phone scenarios. Along the way we have drawn on our backgrounds in literature, theatre and electronic arts, as well as interaction design and the networked city. We have taken our drone into playful sessions, chasing one another in a university lecture hall and then settling it on a grand piano as a touch-down space. We have included the drone in a choreography workshop with master's students and helped them to see their own movements from above, watching the archived video on the iPhone and projecting it on a large screen.¹ We've also flown the drone inside the new Oslo opera as part of an installation and performance art project on composition located in the building's foyer.²

Given all these pragmatic exploratory turns, we have also looked into the popular and academic writings on design fictions. Perhaps we might more precisely also talk about fictional designs: they are very much to do with the unseen and their being materialised (Resnick 2011). They may borrow from cyberpunk fiction and film traditions, such as the early works of William

Gibson and Bruce Sterling's writings on design fiction in fictional form (Gibson 1994, Sterling 2009b). More recently design fiction extends to what are termed steampunk projects. These include material artefacts from an earlier industrial design periods (Tannenbaum, Tanenbaum, and Wakkary 2012).

These notes are presented as a deliberate choice to intervene modestly and critically in what is a very early research discourse on design fictions, and to argue for the connection between research framings and design activities, especially the need to work interdisciplinarily and with reference to popular cultural references, participant expectations and the appearance of a new mobile technology in urban settings. Designing the fiction informs the research and researching the fictional design inspires the creation. However, for us, the term design fiction still remains somewhat indistinct, especially concerning links between design and the speculative.

We are now familiar with the developments of mobile technologies and their uptake in our daily professional and personal lives. They are also a rapidly expanding domain of design, as already prevalent in the growth of apps and locative media. However, to date, little research looks

into the *communication and discursive design* of the cultural and interactional aspects of mobile technologies, tending to concentrate on either infrastructural or technical dimensions or studies of actual use. Informed by such inquiry in human–computer interaction (HCI) and socio-technical analysis, our research focus is to do with finding abductive moves into a techno-communicative design imaginary. This is one that speculates within conceptual grasp, powered by today’s coded and cultural competencies, but alive just outside our perceptions and abilities to knowingly build fully functioning environments and experiences. This raises matters of the speculative in design and design research and the sense or ‘vibe’ that may propel. Parisi writes:

These vibes may correspond to what Whitehead defines as ‘lure for feeling’ deriving from an object’s capacities of feeling its own spatio-temporal transitions while deploying invisible links between the past and the present, yet requiring full immersion in the background of the future. (Parisi 2012, 235)

Kim and DiSalvo (2010) describe speculative design as a means for artists and designers to make apparent political and social agendas through the envisioning of possible futures. Such envisioning may be achieved through participatory design workshops with communities and the embodiment of conceptual proposals in products and interactions. For Kim and DiSalvo:

The most distinctive quality of this line of research is that it provokes issues that are unconscious and hidden in people’s everyday lives. It means that the design does not aim for a specific solution to a problem, but rather an open-ended discussion that is less predetermined and more unanticipated. (Kim and DiSalvo 2010)

While we concur with these words, we also argue that there is also a need to relate such a stance to designing with similar approaches to zooming in on the conceptual and ideation in designing and

researching design fictions as open to impulses, information, various sources and a cross-hatching of popular culture.

Drawing on writings in the critical theories of technology and science technology studies (STS) (e.g. Harraway 1997), we’ve also been arguing there’s a need for design to rear its compositional head and to think today beyond the immediate sheen of our screened lives. How, then, might drone technologies be linked to locative media in urban contexts? When we began thinking about these aspects in 2010, military surveillance and attack drones were already operational in war contexts, most notably in Afghanistan. A number of comprehensive books on unmanned aerial vehicles (UAVs) were easily purchased online, and were found to be full of accessible facts and surprisingly many photographs, given the uses of these tools of airborne control and combat (e.g. Singer 2009; Yenne 2010). Legacies of robotics and artificial intelligence alongside a developmental trajectory of remote viewing tools were included.

Baudrillard’s earlier readings of the first Gulf War as ‘virtual’ included technologies of sensing, seeing and surveillance (Baudrillard 1995). Such technologies had already entered the popular cultural imagination through mainstream cinema much earlier through the cyborg character in the *Terminator* trilogy or the machinations of powerful panoptical states of corporations in *1984*, *Gattaca* or *Tomorrow Never Dies*.³ Global Positioning System services, already embedded in our personal and commercial smartphones, cars and boats, have continued to be used as ciphers and plot devices, such as in, *Enemy of the State* and the recent *GPS The Movie*.⁴

2.2 Data, hybrid, agency

NOTE 49931 / Peeper Drone # 229: 07h12

*No point in keeping a log, they’ll find it.
So I’ve activated an old voice app
An early embed called Kandahar.*

*To take control
To touch something*

*To feel feeling
Dilute my prying eye in the sky.*

*It's an unscripted blip in my traffic.
No one's watching me watching.
My dataflow a ribbon of cityshapes.*

In a previous work we tried to give an ironical knowing voice to a Wi-Fi urban cow that is forced wireless feeds (from today's available Web) as part of her movement across the cityscape of 2050. A mix of technical updates from the past and the pastiche of readers knowing the implausibility of playing out of the narrative from their current positions places a rhetorical wedge between our expectations and the experience of a hybridised creature from the near future. The sentient ruminant we encounter, however, is still largely bovine in character and actions. If, in a similar mode, we were to project and speculate about drone technologies in urban environments, not Wi-Fi signals and feeds, might we need to develop a different narrative topology? Points of interest (POIs) are now central to the vocabulary of locative media, as is seeing from above (Hight 2006). What if the point of view of a drone

could be mapped into a current locative handheld map? How might we imagine these points of view and could they be inserted into current maps peppered with digital pins? What might our drone not only see and sense, but also feel and think?

Once we had taken on the role of an urban cow wirelessly interrupted in her ramblings, physical and verbal, it was not difficult to think of the possible conflicts of interest a drone might develop should it be sentient and sense the materiality of the lived city. Design fictions often work with anthropomorphised characters. They borrow these from science fiction narrative and film and from playful incarnations (Figure 2). They also borrow them from design methods to do with persona building and projection of participant involvement. Relatively early in our process we hatched the idea of a female drone, only recently named Adrona, as a means to think about such a gendered persona and hybrid of human-machine taking to the future skies of our own city. In contrast to the numerous images of male UAV controllers, by embedding splices of human code in Adrona's binary computational assembly we would allow for contradiction to be played out. Thinking through



Figure 3. Material from design fiction archive on archaeology of the future. Screen grab of futuristic rendering of gameplay in AR drone dogfight. © 2012 Parrot SA. Reproduced with permission.

scenarios, narratively and as design methods do in posing a series and range of possible settings and positions in relation to artefacts and settings and services, we began to conceive of how she develops awareness of the clash of her pre-given instructions and her affective and emotional responses and empathy with situations she encounters.

As the core character in *Wi-Fly*, Adrona was from the outset a lonely drone. She is alienated from her scripted purposes and is also growlingly aware of her actions distanced from the people below with whom she feels affinity. Haraway's (1997) and Latour's (1996) diverse writings on hybrids were part of this thinking. By including the character and identity dilemmas of the drone, through the device of a voice-over, as given here, and visual rhetoric point of view, we would attempt to move, and shift between readers' accessing her perspectives and recognitions of their own standpoints. The actant dynamic would thus be extended back into our own perceptions, if not yet interactively through a fully 'fleshed' work of mediated design fiction.

It was important to remain at this conceptual level to find forms and functions that would allow us to both think about how to design and to make a space for designing about and with drones. This meant we would engage in this conceptualising through learning to fly our toy drone, albeit a cheap commercial AR Parrot model with iPhone controls and live video capture (Figure 3).

2.3 From combat to urban settings

NOTE 72226 / Peeper Drone # 229: 14h52

2012.

That was when we went public.

Beyond Gaza, that is.

First in Occupy Wall Street:

Police behaviour documented

Live to smartphones, living online.

Then came the London Olympics

And the advertising blimps lost their skyspace.

We the metal watchers over medal ceremonies.

For more than a few years now we have been hearing about drones in the media. They are a fast-growing feature of military operations and have become more visible in the machinery of war, in the Gulf and in Afghanistan in particular. In 2012 Iran captured a downed US drone and the White House was forced into a public debate about such combatively linked technologies as tools of assassination. Outside specific conflict zones, such as Gaza and Somalia, drones are not yet very visible in city spaces. However, commercial drones have been taken up in recent mass urban protests in the US by the Occupy movement in settings in New York, where police actions have been questioned by protestors. This can be seen in the posting of images onto the photo-sharing service Flickr, such as by Stanley Roguski⁵ and the appearance of images and articles such as in *Time* online.⁶ The airborne cameras and live iPhone video for webcasting via the AR Parrot have made it possible to show and document crowd control tactics from above, revealing what protestors on the streets cannot see, such as in the live-streaming championed by the award-winning Tim Pool.⁷ Elsewhere, smaller drones are being adopted by police departments to venture into, and especially over, troubled city spots and neighbourhoods and also to follow, at a more micro-level, activities that can be filmed and transmitted wirelessly. These technologies of urban seeing are already alive and in use in larger cities that are not at war. As the image in Figure 1 shows, drone shadows can already be seen, literally and symbolically, in car parks in London, UK.

We therefore saw an opportunity to develop a small set of scenarios to allow for speculations about the application of UAVs in urban management and policing. Against the communicative and global cultural ubiquity of Facebook, we therefore planned to make a small interruption in the locative mediascape and mobile interfaces of citizens travelling their urban terrain. In an action research frame, we look towards ways to interrupt and query the mundane flow of mobile mediation. In this deliberative, cultural interruption we would need to inscribe and insert some means to promote,

but not direct, critical thought and reflection about the possible development of drone technologies. Here we would draw on the positionalities taken up in work in artistic critiques of technology embedded in artefacts in the work of what Dunne (2005) and Dunne and Raby (2007) have termed *critical design*. This work tends to be directed through art pieces and projects in which design is embedded in speculative artefacts that have an exhibitional polish and are mediated as finished artefacts. They are intended to provoke or problematise aspects of design so as ‘to challenge narrow assumptions, preconceptions and givens about the role products play in everyday life’.⁸

Today cities are themselves being marketed as ‘smart’: they are populated with sensors and tracking technologies; we move between mobile cells and push media boundaries; and we dip in and out of Wi-Fi zones. Such research and development we prefer to locate as part of what we term the networked city: this is made up of overlapping urban spaces and everyday practices in our accesses and uses of mobile locational technologies. This design fiction also therefore functions as a projection of our own concerns with the rapid emergence of aerial-like technologies and their primary development and use in military settings today, such as on the borders of Somalia, the mountains of Pakistan and deserts of Yemen. Yet, it brings them home to roost in design and via design fiction on the networked city.

2.4 Drone as tool and medium

NOTE 102855 / Peeper Drone # 229: 18h42

What seeing sense have they in their ground-bound minds?

Mouthing at their screens,

Finger tipping at infoglyphs.

Tracking.

Mapping.

Yapping.

The endless need to herd and quieten.

Eyes focused in their feudal sky.

I, drone as medium.

The very real powers of UAVs, flying often invisibly above civilian populations, was reported to have been put to work by the Syrian government in 2012 in following—and eliminating—a set of activists in the city of Homs who were trying to escape detection and death. This may have been the first urban massacre-by-drone of citizens fleeing the bombardment of a city by their own national army. Late in 2012 the photo-sharing site Instagram included specific drone strike images under the title Dronestagram via the work of James Bridle.⁹ More pilots are now being trained for UAVs than manned craft. Today’s flying variants, publicly seen in British Aerospace’s materials, at airshows and on YouTube, include minatures such as AeroVironment’s Nano Hummingbird and a ‘nano-helicopter’ by the Norwegian concern Proxdynamics. Drones function as tools. But they also allow us to aerially access points of view and airborne pathways that are delivered as mobile and locative media. Related art exhibitions have already been shown with material from the recent war in Libya (Eibakke 2012) and a crashed drone on the Mexican–US border (Crandall 2011). The drone as trope has now also entered popular Hollywood cinema in the romantic comedy *This Means War* (2012), directed by Joseph McGinty Nichol, where two manly CIA agents duel for the attentions of a shared female love interest. In contrast, and as part of an entirely different take on the popular, UAVs have been deployed as a countermeasure by the Occupy Wall Street movement to protest crowds being controlled by the police. Adrona is at once here almost present, but just beyond our mediational and interpretative reach as she asserts her own voice and offers a different articulation of a near future Nordic capital city all too recently traumatised by the violent actions of one citizen bent upon destroying cultural diversity and social democratic processes.

While there is a small body of self-reflexive design fictions and related research texts (Grand 2012; Grand and Wiedmer 2010), we agree with Bruce Sterling (2009, 23–24) that there is a need to focus less on the fiction and more on the design in design fictions. In this research text, that

has therefore been our focus. We adopt what we have termed a discursive design approach that includes a mix of media types, design activities and competencies and modes of representation and expression. This approach also entails reflexive moves between making, communicating and analysing. Such moves are themselves part of a dynamic and emergent design discourse that is constituted in the activities of designing and its cultural realisations through performative engagement.

Broadly, *Wi-Fly* is also intended to generate in readers and commentators a sense of their own lived everyday urban experience under existing modes of urban and personal surveillance. These metropolitan tracking mechanisms are now extended from CCTV systems to the data mining of our popular and professional mobile communication and the kinetic practices of our activities in and across the city. For smartphone users, one intention from our own research and design centred conceptualising is to provide unexpected short sequences of the future city. These may be scenarios that flip quickly past in the present, providing ruptures to the seamless we are repeatedly sold by mobile service providers and app makers championing their locative media appeal.

In essence, then, design fictions are to do with projections; that is, from the here-and-now and by way of bygone times. These may include written styles and visuals from the formats of science fiction, such as comics, novels and films, and their resonances in wider popular cultural imagination (e.g. Corn and Horrigan 1996). These need to be seen in relation to other discussions or popular-oriented accounts or ‘histories’ of the near future (e.g. Strathern 2007). They may extend into cyber- and steampunk writings that invite us into speculative worlds that echo and amplify, innovate and garnish our expectations of the everyday. Yet they also embody imaginative reach into potential, possible and partly improbable future scenarios, events and narratives, as in drone games (Figure 3). These are domains where the rules of natural physics or expected human behaviours may be bent, culturally and communicatively as much as materially.

3 Reflections

I see you
Dodging between the cameras
Looking skyward
Sensing me
Innocently afraid
Just passportless.

I'm rippled
By a burst of emotional blowback
My body dangerously tilted
Cameras blurred

Pre-loaded I am
To scan your streets
Read your heatmap
In case you stray.
Paths and patterns
Interrupted.

Shouldn't I feel a sense of urgency?
You, facefully recognised
Boots on the ground,
Insurgent tagged.
My blades airborne
Software worn.

These our shared collateral
For urban command central.

Design fictions move between fact and imagination (Auger 2010; Bleecker 2010): they employ techniques and rhetorical realisations of imagined (near) futures and current cultural socio-techno realities. Much of the attention so far given to design fictions has been on their diegetic status (Kirby 2010), their fictional voice and the need for design research to engage speculatively in such a mode of inquiry. This has been the case with design fictions informed by research into critical design. We argue that research into design fictions is in an almost unique position to use play as a mode of researching (e.g. Bayliss et al. 2009) and articulating relations between composition and construction and creative speculative imagining (Shepard 2011). Here there is room for

a more extensive theorising about speculation in design research, and the potential for fictional stances in accessing how we may come to know and make apparent what we embed within speculative processes and artefacts, and what these imply for a wider public in thinking (and acting) beyond the momentary impulses and sensory stimulations of today's technologically mediated cities.

Schriver (2009, 14) writes:

A fictional scenario can make the ramifications of a specific development more clearly visible than the typical reality of steady, incremental change. Moreover, our fictions often reveal much more of the (self-)image of our society than we might originally imagine.

#Mediationally via images and animation with voice-over, these prospective scenarios situate *Wi-Fly* clearly in the future, but they simultaneously locate it the viewer's own hands in the present. This is a new development in what we term *translocative media*. Future time plays out within current location, yet it places projected events into the immediate actions of the participant to this process.

Following the work of John Law (e.g. Law 2004), our article may be seen as an instance of a 'knowledge mediation': it is inflected with research rhetorics, located in design specifics and makes manifest exploratory techniques from the thick of designing at a conceptual phase. We have demonstrated how design fictions may be moved from argument and illustration to embodied mobile domains that are imaginary, critical and kinetic. This extends research beyond book-type discussions and print-based representations of the future (e.g. Samuel 2010; Lim and Liu 2011) into playful, critical and performatively designed future scenarios on smartphones via locative media and dashes of video. We suggest that play can also be included at the level of the design work itself, so that the ludic may be extended from the activities of designing to being embedded as part of the fabric and character of fictional design works. This also entails the ways they are performed and realised, and

reveals aspects of co-creation and projection through which the speculative may be held in our hands, yet moved back into the worlds in which we move. This takes design fictions into the street while twittering away in our imaginations in a hash-tagging of the immediate and projections of other worldly near future approximations. Here, as Sassen (2011) argues, we are 'unsettling topographic representation'.

4 Conclusions

Design fictions can be developed to problematise and project alternate topographic representations of the near future. As designers and as researchers, we see a need to also do so at an early conceptual level in the wider processes of developing fully framed design fictions. In this article we have focussed on the speculative in processes of conceptualising one design fiction, by way of prompts, through reference to inspirations, and by abductive links as they occur in the conceptual phase of designing a speculative locative media design fiction. We see that there is a need to much more critically unpack the early ideational phases of design fiction than is usually credited in the research literature. In so doing we try to arrive at deeper understanding about designing the speculative for research and for 'composition'. This matters if we are to engage critically and creatively with the discourses of the sentient and networked city as a key site for design fiction and cultural critique, alongside the specific technical and symbolic characteristics they may too easily embed and naturalise in a teleology of seamless delivery and experience.

As a measure towards achieving this, Shepard (2011, 225) suggests we develop a 'Survival Kit for the Sentient City'. In several respects our speculative investigation *Wi-Fly* could be seen as contributing to his vision. However, more indirectly it may be understood and experienced as an irruptive, intervention about why such a kit is needed. Urban drones are already kitted out, as it were, to observe us as part of the expanding territoriality of the networked city. How are we to understand their unfolding design dynamics as

part of the ways in which the invisible links and sensing capacities of wireless, ubiquitous computing technologies are put into play in city settings? How too, then, might we move not only into the analytic borderlands (Sassen 2011, 185) of such a sentient city discourse, but also, even at the conceptual phase of shaping design fictions, pose the potential of developing an urban daily life with meaningful interactivity.

We see a need for design fictions—early on in their composition—to engage at a wider cultural level with traditions of blended notions of fact, speculation and contest. This counters the seamlessness offered by the marketing and persuasive discourses of ‘smart wars’ and ‘smart cities’. What design fiction and engaging with the speculative and discursive in design offers is a prospective hermeneutic means for expressing popular cultural imaginaries that trouble us, interrupt the force of dominant discourses and thereby ask us to open our eyes both as producers of designs and as inquisitive urban dwellers. For already today, there’s a lonely drone in our urban sky.

Acknowledgements

Our thanks go to colleagues at the Centre for Design Research at AHO (<http://www.designresearch.no>) and the YOURban design research project (<http://www.yourban.no>) for their comments and suggestions, and to James Bridle, Amanda Steggel, Jill Sigman, Kristin Norderval, Synne Skjulstad and Gunnar Liestøl for their suggestions and involvement. The article is an outcome of the YOURban project into social media, performativity and the city, funded by the VERDIKT programme, Research Council of Norway.

Notes

- ¹ Amanda Steggel, KHiO (Oslo University of the Arts) choreography workshop 2011, *Time to Switch*. Available at <http://www.testingtesting.org/workshops>.
- ² The Hut project: *Hut #6 (DetritHUS)*, the Norwegian Opera, 10–12 October 2011, with special performances by Jill Sigman, Kristin

Norderval, and Amund Sveen. Available at <http://www.thinkdance.org/page5/page5.html>.

- ³ *Terminator* (1984). Cameron, J. (Director). 107 mins, colour; *1984* (1984). Radford, M. (Director). 113 mins, colour; *Gattaca* (1987). Niccol, A. (Director). 106 mins, colour; *Tomorrow Never Dies* (1997). Spottiswoode, R. (Director). 119 mins, colour.
- ⁴ *Enemy of the State*. (1998). Scott, T. (Director). 132 min, colour; *GPS the Movie* (2007). Colley, E. (Director). 98 mins, colour.
- ⁵ <http://www.flickr.com/photos/stanleyrogouski/6536148907/>.
- ⁶ <http://techland.time.com/2011/12/21/occupy-wall-streets-new-drone-the-occuicopter/>.
- ⁷ http://en.wikipedia.org/wiki/Tim_Pool.
- ⁸ <http://www.dunneandraby.co.uk/content/bydandr/13/0>.
- ⁹ See <http://instagram.com/dronestagram> and <http://booktwo.org/notebook/dronestagram-drones-eye-view/>. ‘Dronestagram posts images from Google Maps Satellite view to Instagram, and syndicates this feed to Tumblr and Twitter, along with short summaries of each site.’ as quoted in James Bridle’s site: <http://booktwo.org/notebook/dronestagram-drones-eye-view/> (accessed 10 February 2013).

References

- Arnall, T., and E. Martinussen. 2010. “Depth of Field: Discursive Design Research Through Film.” *FORMakademisk* 3 (1). <http://www.formakademisk.org/index.php/formakademisk/article/viewArticle/68>.
- Auger, J. 2010. “Alternative Presents and Speculative Futures.” In *Proceedings of 6th SDN Conference: Negotiating Futures – Design Fiction*, 28–30 October, 58–67. Basel: Swiss Design Network. Accessed 10 February 2013. <http://sdn2010.ch/>.
- Bakhtin, M. 1981. *The Dialogic Imagination*. Austin, TX: University of Texas Press.
- Baudrillard, J. 1975. *The Gulf War Did Not Take Place*. Bloomington: Indiana University Press.
- Bayliss, A., D. Hales, S. Palmer, and J. Sheridan. 2009. “(Re)searching through Play: Play as a Framework and Methodology for Collaborative Design Processes.” *International Journal of Art and Technology* 2 (1/2): 5–21.
- Benford, G., and The Editors of Popular Mechanics. 2010. *The Wonderful Future That Never Was: Flying Cars, Mail Delivery by Parachute,*

- and *Other Predictions from the Past*. New York: Hearst.
- Blackmore, T. 2005. "Dead Slow: Unmanned Aerial Vehicles Loitering in Battlespace." *Bulletin of Science Technology and Society* 25 (3): 195–214.
- Bleecker, J. 2010. "Fiction: From Props to Prototypes". In *Proceedings of 6th SDN Conference: Negotiating Futures – Design Fiction*, 28–30 October, 58–67. Basel: Swiss Design Network. Accessed 10 February 2013. <http://sdn2010.ch/>.
- Corn, J., and B. Horrigan. 1996. *Yesterday's Tomorrows: Past Visions of the American Future*. Baltimore, MD: The Johns Hopkins University Press.
- Crandall, J. 2011. "Ontologies of the Wayward Drone: A Salvage Operation." *Theory Beyond the Codes: CTheory*. 2 November. <http://www.ctheory.net/articles.aspx?id=693>
- Crandall, J. 2012. "Drone Desire." *Rhizome*. 20 February. <http://rhizome.org/editorial/2012/feb/20/drone-desire/>.
- Dourish, P., and G. Bell. 2011. *Divining a Digital Future*. Cambridge, MA: The MIT Press.
- Dunne, A. 2005. *Hertzian Tales: Electronic Products, Aesthetic Experience, and Critical Design*. Cambridge, MA: The MIT Press.
- Dunne, A., and F. Raby. 2007. "Critical Design FAQ." Accessed 10 February 2013. <http://www.dunneandraby.co.uk/content/bydandr/13/0>.
- Eiebakke, A. 2012. "Retrun to Home". Exhibition at dortmundbodega gallery, Oslo, Norway. 20 January – 5 February 2012. Accessed 10 February 2013. <http://www.flickr.com/photos/halvorbodin/sets/72157628980959887/>.
- Ericson, M., and R. Mazé. 2012. *Design Act: Socially and Politically Engaged Design Today—Critical Roles and Emerging Tactics*. Stockholm: Iaspis in collaboration with the Interactive Institute and Sternberg Press.
- Gadano, P., and B. Sterling. 2009. *Scenarios and Speculations*. Amsterdam: Sun.
- Galloway, A. 2004. "Intimations of Everyday Life: Ubiquitous Computing and the City." *Cultural Studies* 18 (2–3): 384–408.
- Galloway, A. 2010. "Locating Media Futures in the Present." *Aether* 5a: 27–37.
- Gibson, W. 1994. *Virtual Light*. New York: Random House.
- Grand, S. 2012. "Research as Design." In *Mapping Design Research*, edited by S. Grand, W. Jonas, and R. Michel, 155–175. Basel: Birkhauser.
- Grand, S., and M. Wiedmer. 2010. "Design Fiction." In *Proceedings of DRS 10*. Montreal. Design Research Society. CD-ROM. Details available: <http://www.designresearchsociety.org/joomla/proceedings.html>.
- Harraway, D. 1997. *Modest Witness@Second Millennium. FemaleMan Meets OncoMouse*. New York: Routledge.
- Hight, J. 2006. "Views from Above: Locative Narrative and the Landscape." *Leonardo Electronic Almanac* 14 (7–8). http://lealmanac.org/journal/vol_14/lea_v14_n07-08/jhight.html.
- Kim, T., and C. DiSalvo. 2010. "Speculative Visualization: A New Rhetoric for Communicating Public Concerns". *Proceedings of Design Research Society (DRS) International Conference Design and Complexity*, 7–9 July, in Montreal. <http://www.drs2010.umontreal.ca/data/PDF/066.pdf>.
- Kirby, D. 2010. "The Future is Now: Diegetic Prototypes and the Role of Popular Films in Generating Real-world Technological Development." *Social Studies of Science* 40: 41–70.
- Latour, B. 1996. *Aramis or the Love of Technology*. Cambridge, MA: Harvard University Press.
- Law, J. 2004. *After Method: Mess in Social Science Research*. London: Routledge.
- Law, John. 2011. "The Explanatory Burden: An Essay on Hugh Raffles' *Insectopedia*." *Cultural Anthropology* 26 (3): 485–510.
- Lim, C., and E. Liu. 2011. *Short Stories: London in Two-and-a-Half Dimensions*. London: Routledge.
- Mazé, R., and J. Redström. 2009. "Difficult Forms: Critical Practices of Design and Research." *Research Design Journal* 1 (1): 28–39.
- Morrison, A. 2011. "Reflections of a Wireless Ruminant." In *Proceedings of Fourth Nordic Design Research Conference. Nordes '11: Making Design Matter*. Helsinki, Finland, 29 May–1 June. <http://designresearch.fi/nordes2011/>
- Morrison, A., T. Arnall, J. Knutsen, E. Martinussen, and K. Nordby. 2011. "Towards Discursive Design". In *4th World Conference on Design Research (IASDR2011)*, in Delft, The Netherlands. October 31xNovember 4. <http://www.iasdr2011.org/>.
- Morrison, A., and H. Mainsah. 2012. "Building Communication by Design: Mobile Fiction and the City."

- In *Design Innovation for the Built Environment: Research by Design and the Renovation of Practices*, edited by M. Hensel, 221–234. London: Routledge.
- Parisi, L. 2012. “Speculation: A Method for the Unattainable.” In *Inventive Methods: The Happening of the Social*, edited by C. Lury and N. Wakeford, 232–244. London: Routledge.
- Resnick, R. 2011. “Materialization of the Speculative in Foresight and Design.” Master’s thesis. Toronto, Ontario: OCAD University.
- Reynolds, N. 2003. *Geographies of Writing: Inhabiting Places and Encountering Difference*. Carbondale, IL: Southern Illinois University Press.
- Samuel, L. 2010. *Future: A Recent History*. Austin: University of Texas Press.
- Sassen, S. 2011. “Unsettling Topographic Representation.” In *Sentient City*, edited by M. Shepard, 182–189. Cambridge, MA: The MIT Press.
- Schriver, L. 2009. “Scenarios and Speculations: Dreaming the World that Might Still Become.” *Scenarios and Speculations. Beyond*, Vol. 1, 12–17. Amsterdam: SUN Architecture.
- Seago, A., and A. Dunne. 1999. “New Methodologies in Art and Design Research: The Object as Discourse.” *Design Issues* 15 (2): 11–17.
- Shepard, M. ed. 2011. *Sentient City*. Cambridge, MA: The MIT Press.
- Shepard, M. 2011. “Postscript: Notes on Survival in the Sentient City.” In *Sentient City*, edited by M. Shepard, 224–225. Cambridge, MA: The MIT Press.
- Singer, P. 2009. *Wired for War*. New York: Penguin.
- Sterling, B. 2002. *Tomorrow Now: Envisioning the Next Fifty Years*. New York: Random House.
- Sterling, B. 2009a. “Design Fictions.” *Interactions* 16 (3): 21–24.
- Sterling, B. 2009b. “White Fungus.” *Scenarios and Speculations*, edited by P. Gadanho and B. Sterling, 18–29. Amsterdam: Sun.
- Strathern, O. 2007. *A Brief History of the Future*. London: Robinson.
- Tanenbaum, J., K. Tanenbaum, and R. Wakkary. 2012. “Steampunk as Design Fiction.” In *Proceedings of CHI 2012*, 5–10 May, Austin, TX, 1583–1592. New York: ACM Publications.
- Yenne, B. 2010. *Birds of Prey*. North Branch, MN: Specialty Press.
- Andrew Morrison** is a design researcher interested in speculation in designing and design inquiry. His research and publications cover a diversity of domains in design, including the networked city, social media, design and the digital humanities and intersections between design, rhetoric, media, narrative and art. Andrew is Director of the Centre for Design Research at the Oslo School of Architecture and Design (<http://www.designresearch.no>), a contributor to the Nordes organisation and conferences, a board member of the Design Research Society and the editorial boards of the rhetoric and communication journals *Computers and Composition* and *Kairos*. He has been a coordinator of the AHO doctoral school.
- Ragnhild Tronstad** is a researcher in the YOUrban project into social media, the city and performativity, based at the he Oslo School of Architecture and Design. She leads the sub-project PLAYUR into play, design and performativity in the networked city, having researched related domains of gaming and media in which she has published widely. Her most recent publications include several entries in *The Johns Hopkins Guide to Digital Media and Textuality*.
- Einar Sneve Martinussen** is an interaction designer and researcher working with technology, cities and everyday life. He is completing a doctorate at the Oslo School of Architecture and Design as a part of the research project YOUrban on networked cities, social media and design. His work includes visualisations of technology, films, interactive products and exhibitions. Einar also teaches various areas of interaction design and is a part of the design studio Voy (<http://www.voyoslo.com>).