

Hello

# Designing between things, places and people

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Intro: run a research project at AHO, teach ‘tangible interactions’.

Since we are talking again over the next few days in more detail about technologies and projects, this will just be an introduction to our work.

So I’ll start by showing a little history behind my own work, some recent design briefs that we have been working around, and a few pointers.



So we could say that the theme of this presentation is the creative layering of things, places, people and content.

I come from a design and film background. I have a history of work with narrative, design for linear form and animation.

At the end of the 90s I moved away from that work and started making interactive things for the web and mobile phones.

This interactive work started thinking about media on personal devices, location based media and such

Sat Jul 3 12:11:57 GMT+0200 2004

64.240657N 10.3347775W elevation:89.059326m



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My first foray into combining location and content.

In 2004 Even Westvang and I worked on 'Timeland', a piece created during a workshop in Iceland looking at 'locative' media.

Video

It takes GPS data, merges it with photos and plays it out over time and space. It's a fancier way of doing flickr photo maps, but it's an entirely different experience.



This is some of the raw 3D data from various trips. We may see something similar for Amsterdam...  
After 1.5 years of constantly mapping my movements, I began to design other interfaces for this data.  
This is only useful as a storytelling medium: graphically they are totally boring to others.





But, the biggest lesson from the project was the problem of using GPS in daily life.

GPS is a very top-down and rational technology, it relies on a huge infrastructure that is so far away that it doesn't work when there are buildings. It doesn't degrade well.

It made me get run-down, walk in the middle of the street, to disconnect from my surroundings. So, I learnt to heavily dislike GPS...



So around that time I started looking into other technologies.  
At a conference in 2004 I was introduced to a Nokia prototype phone that would read and write to RFID.  
But they were interesting enough to start doing research around.





In 2006 we started a three year project called 'Touch' to look at the use of the technology.

I find NFC fascinating because it is such a simple and cheap technology. It's so hackable, has the potential to be user-driven. It also promises to be a new kind of interaction (a new way of doing interactive things)

Will talk more about NFC phones this afternoon.





## Local applications and services

What are the suitable interactions, services and applications for public spaces, and in what places can these interactions take place?

NFC has defined one such interaction: the 'Smart Poster', which is a standard which should allow advertising to become interactive at the swipe of a phone.





FOTO: ROLF DAMM

Tranes gate 98. Selv  
er oppløselig i  
brannvesenet å ikke

spyle vekk malingen for å unngå  
at gaten skulle bli heidekkende  
hvit.



andre verdsløker ved 03.30-ti-  
den i natt. Gjerningsmannen skal  
ha afrikansk utseende, og for-  
svant fra café Coma i Brugata.

## Våknet på toalettet

SENTRUM: Bakfull og med et  
sterkt ønske om frisk luft ringte  
en mann fra toalettet på Parkte-  
ateret café klokken 07.09. Kveld-  
den i går var såpass vellykket at  
han falt i dyp søvn. I morges  
kunne han rusle ut i friluft for  
egen maskin.

## Bulket bil

GRØNLAND: En beruset kvinne  
(39) brukte krykken til å lage  
bulker i en parkert bil i Brugata  
ved 23-tiden. Bileieren kom til  
og var fornøyd med at hun gjør-  
de opp for seg med en tusen-  
lapp.

## I Adams drakt

SAGENE: Politiet stusset litt da  
en naken mann kom ved Sagene  
kirke ved 04.20-tiden. Hending-  
sen skyldtes trolig mer oversta-  
dig beruselse enn at 27-åringen  
følte seg spesielt varm i septem-

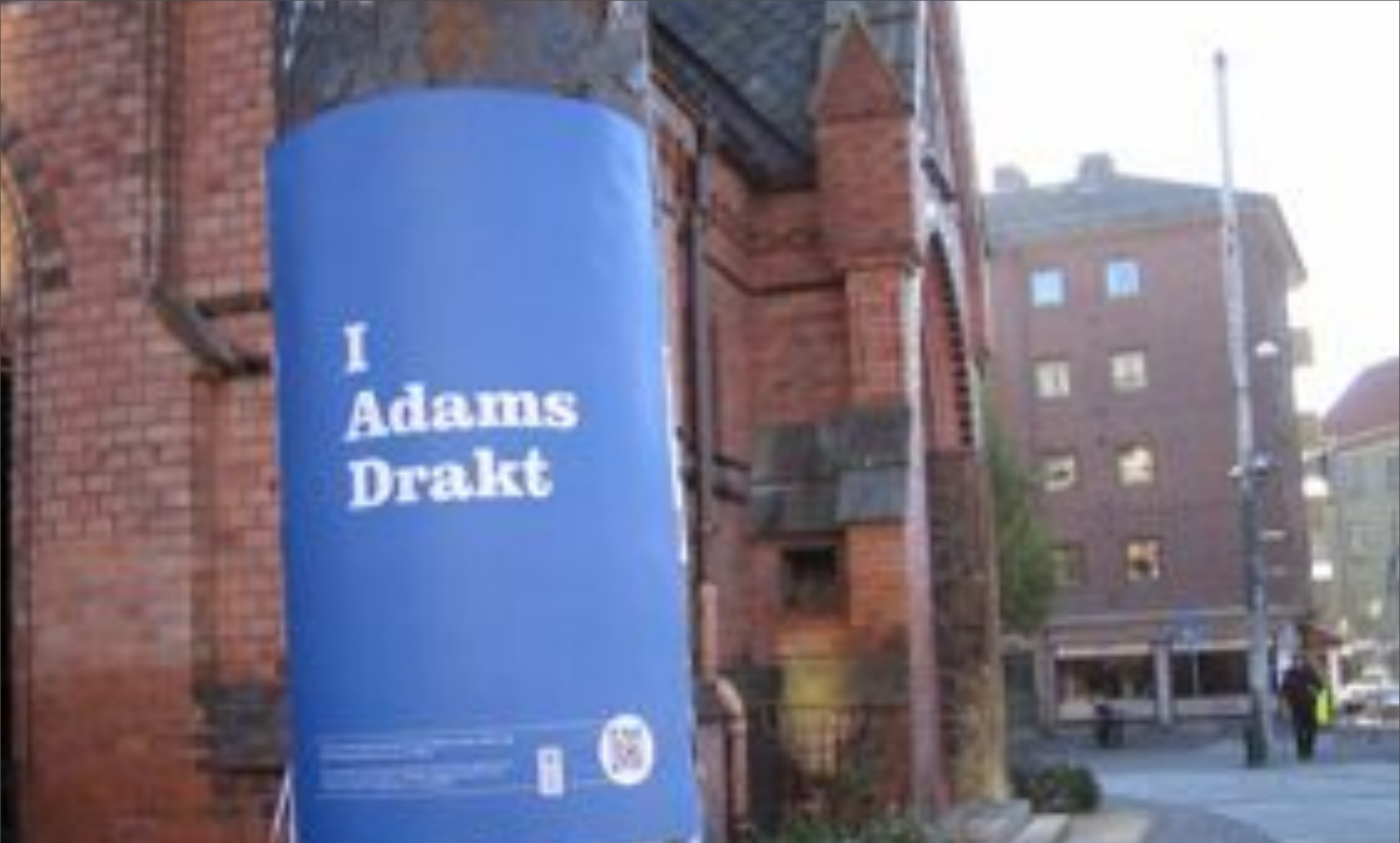
## Hissig kunde

SENTRUM: Da han ikke fikk byttet  
plagget han hadde kjøpt i en for-

Local applications and services

So one of our students, Marianne Hollum Lydersen created a lovely project where she took the strange content from the 'last page' of newspapers. She placed them back in the places where these odd things took place.





## Local applications and services

She offered people the stories via barcodes on posters.

Although this was a lovely project, receiving the best praise, nothing could overcome the fact that interacting with barcodes in the street seems odd, awkward and uncomfortable experience. Like picking up rubbish.

It shows that the context of public interaction is badly understood.





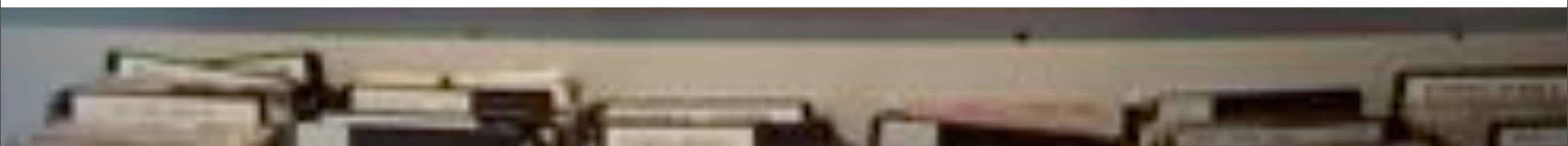
## Local applications and services

Another group of students experimented with events and presence. Building upon the event service Underskog they built a system that gets people to tell others that they are present.





## Local applications and services



Another group looked at a local record shop, and discovered hundreds of potential applications.

- Playlists
- Staff picks
- Recent arrivals
- Event related things
- Playing now



## Touch as culture

Anne Galloway is a social researcher with technology, space and culture. She is looking at touch in different social and cultural contexts.

What are the various meanings of touch, and how do they vary according to social and cultural context?

When is it appropriate to touch, and when is it not?





## ‘Design for all’ with NFC

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How might NFC be used to create interfaces that are appropriate for the widest range of users?

For elderly or users with motor difficulties.

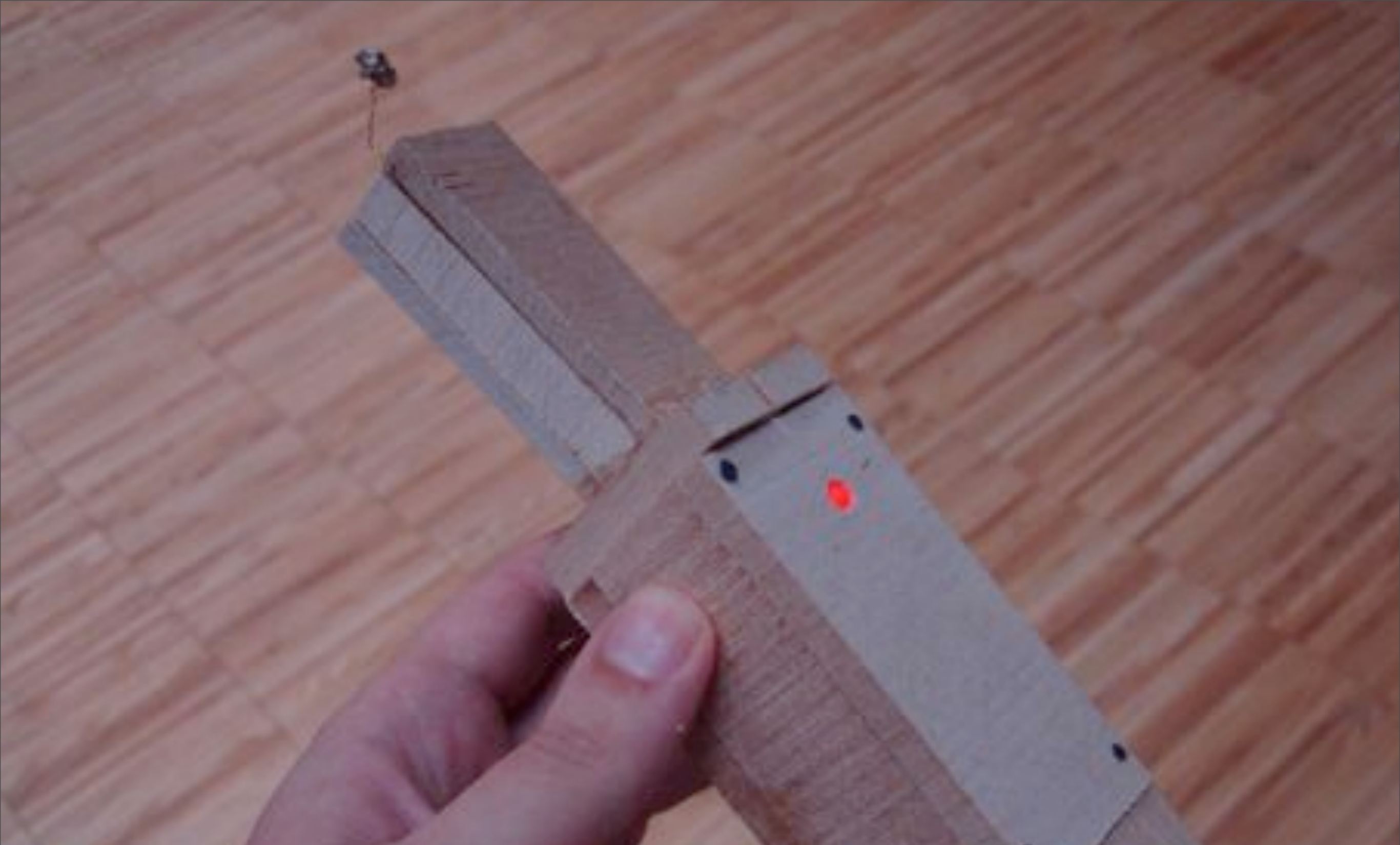
The act of touching a large area on an object is thought to be easier than pressing buttons and navigating hierarchical menus. But there is a distinct lack of research and testing in this area, and so far there is no proof that this is easier or more desirable for any group of users.





## Touch as an interaction medium

If we are using our mobile phones to interact with the physical world via NFC, what kinds of new interaction methods emerge on our mobile devices?



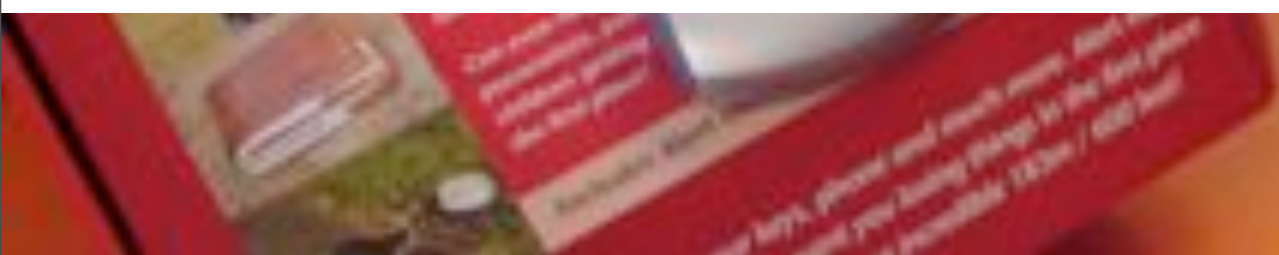
## Touch as an interaction medium

At the moment NFC phones may give us tactile and audio feedback when we touch an NFC tag. We are then forced to look at the screen to confirm NFC actions. But one of the largest usability opportunities for NFC is reducing our reliance on screen-based interfaces.



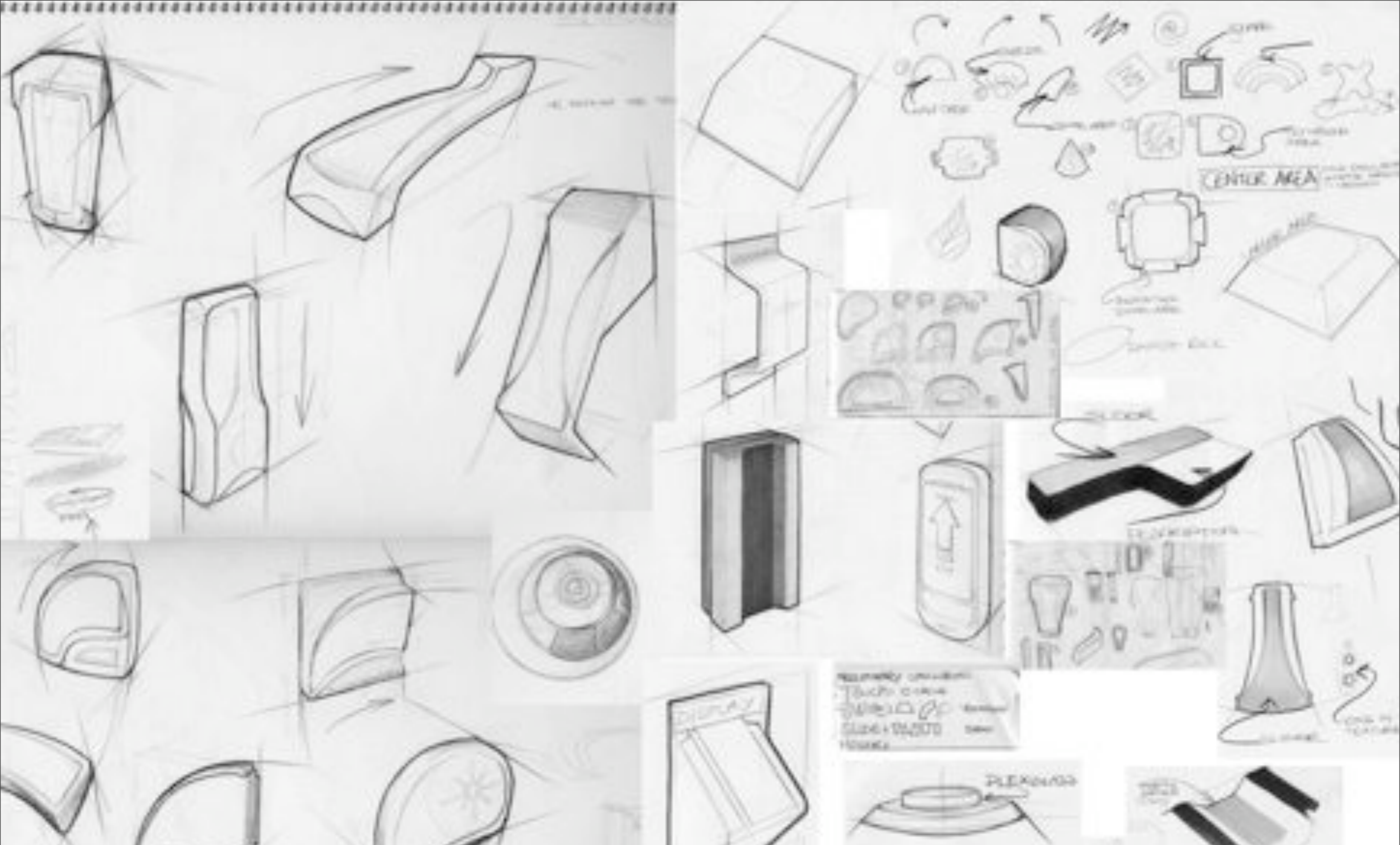


## Touch as an interaction medium



So in order to start experimenting with the interactions, we have gone back to basics: what does putting an RFID close to a reader feel like? And it turns out, it's not simple.



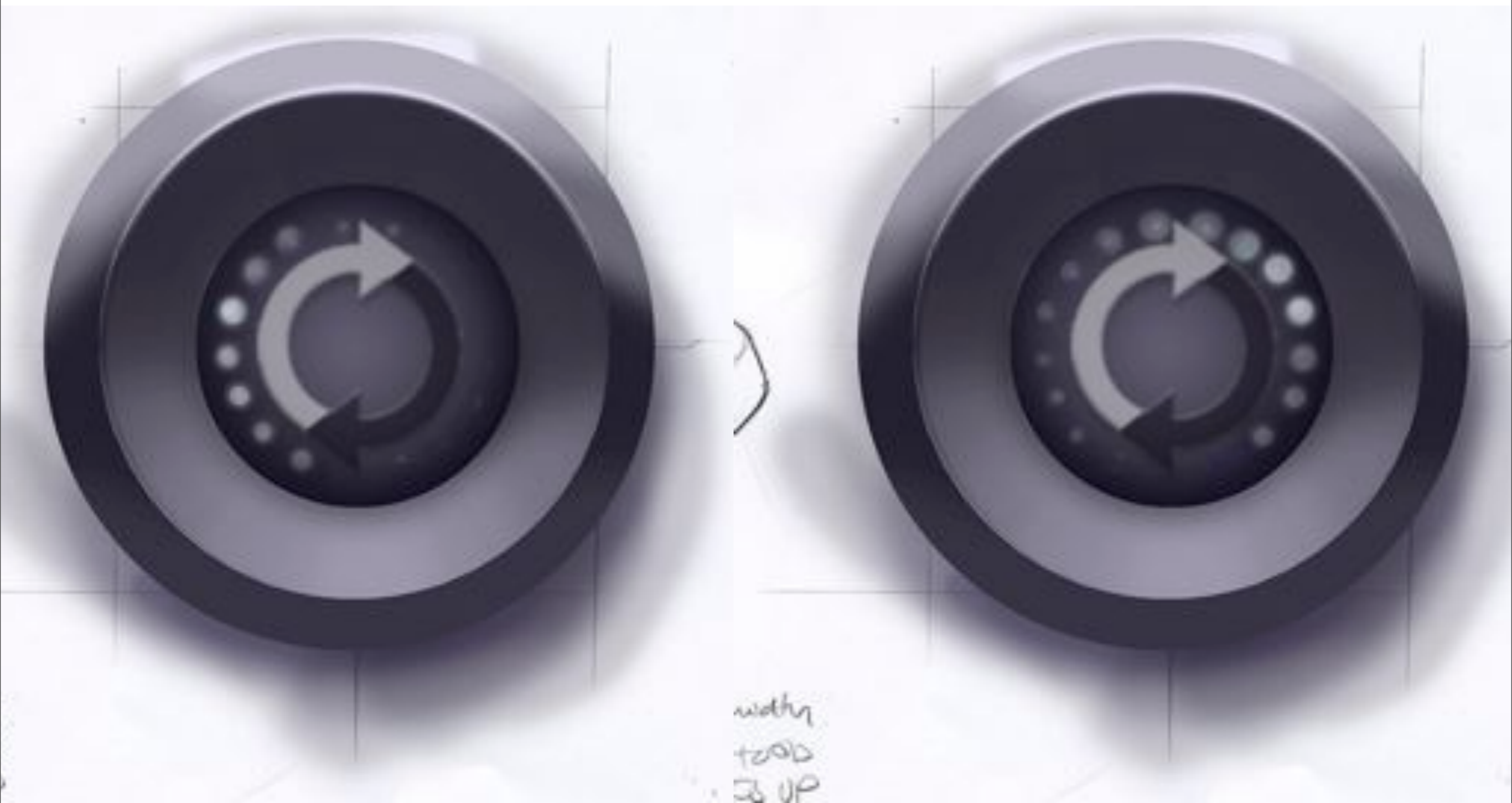


## Touch as an interaction medium



We have students working on the form of RFID readers and NFC phones.  
This is the work of Katarina Kjelland.



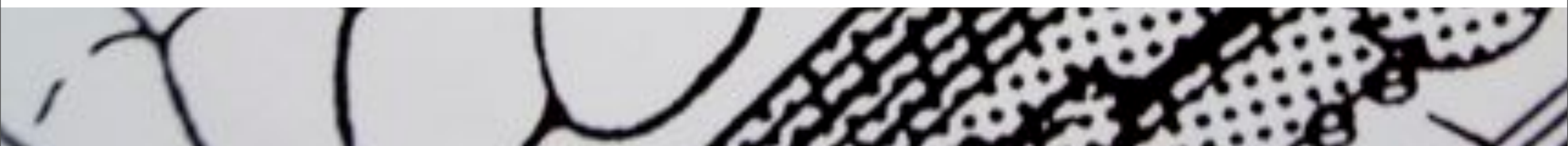


## Touch as an interaction medium

Here she is looking at the way an object would respond when touched.



## A graphic language for RFID



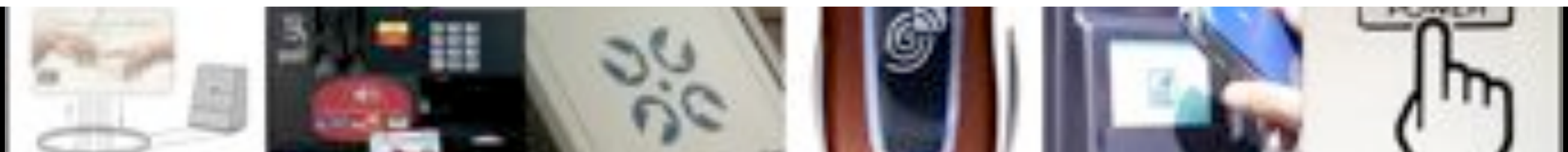
In this project we want to design and test a range of icons that explain important aspects of RFID-based interactions.

How do we visualise RFID-based interactions?





A graphic language for RFID



Based on a dissatisfaction with the existing range of icons used to represent RFID interactions





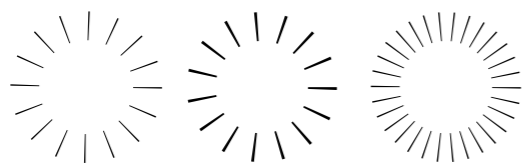
## A graphic language for RFID

Sketches drawn with Schulze & Webb in London, worked up with students from Central St Martins.

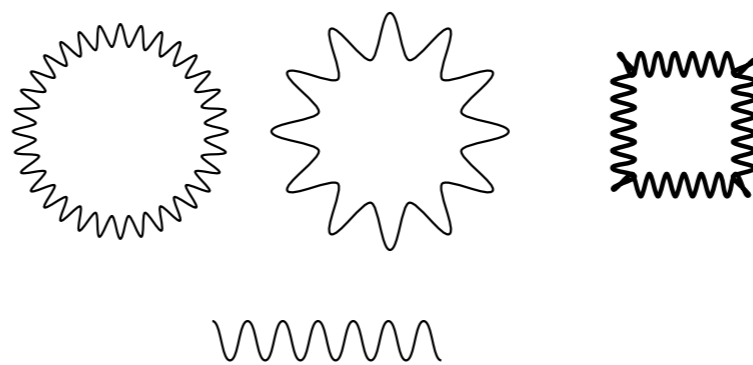
Looking at payment icons.



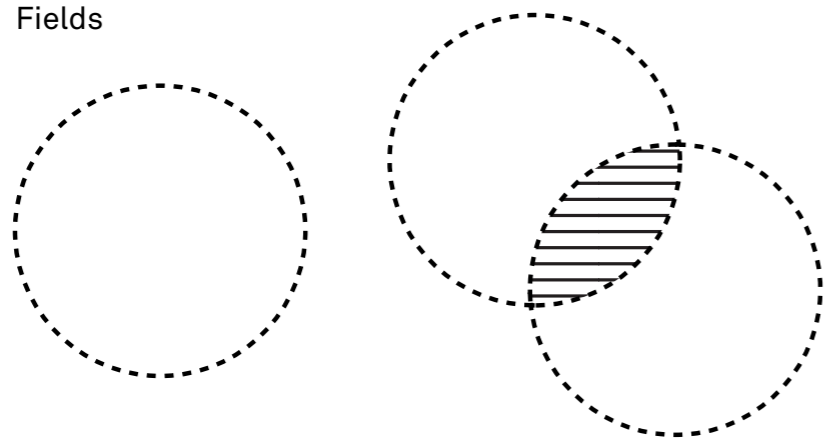
Action



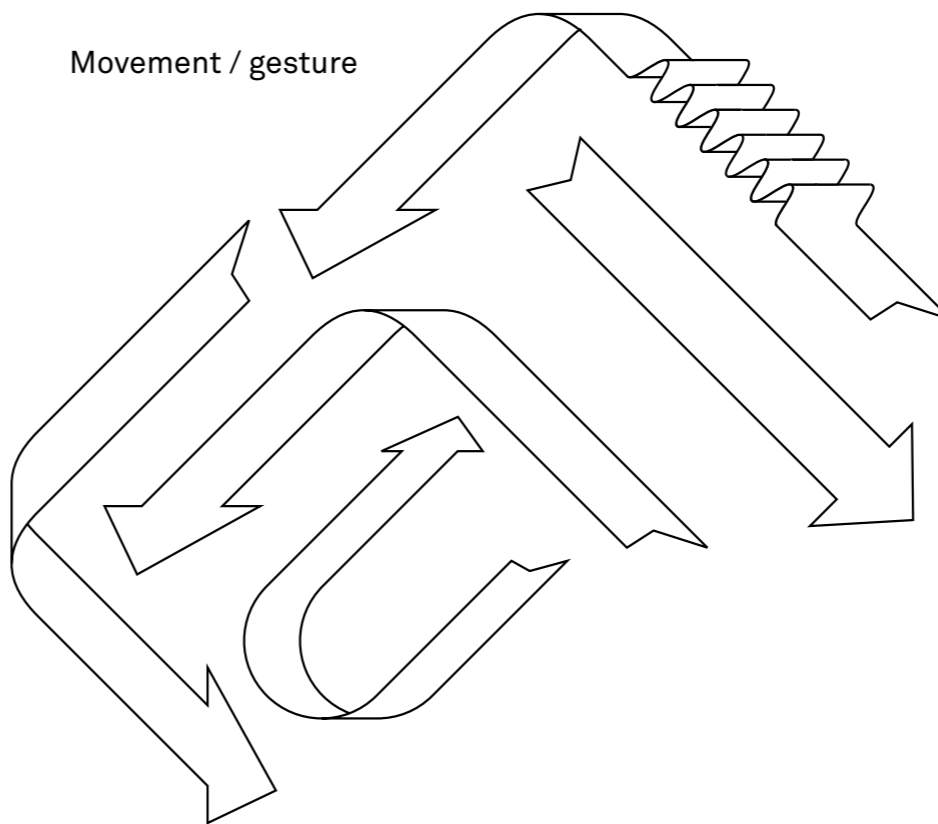
Feedback (vibration)



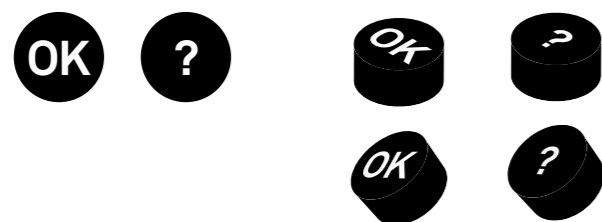
Fields



Movement / gesture



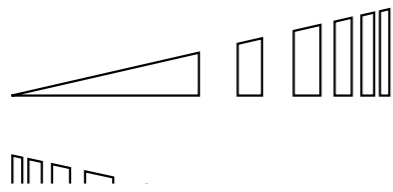
Buttons



Screen



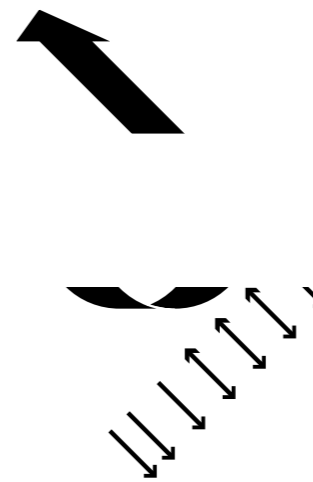
Sound



State

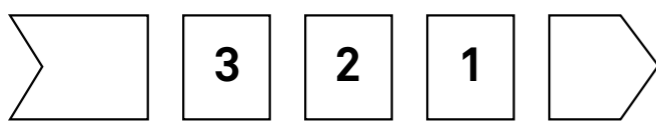


TEchnicalities



# A graphic language for RFID

Technicalities



Here are some sketches looking at describing the interaction patterns.



## Interfacing the 'internet of things'

Do NFC devices have a role to play as an interface for the internet of things?

The 'internet of things' is a vision of the world of interconnected devices that participate in a wider world of information. But so little thought is going into how this might be useful, or how we – as users – will interact with it.

Perhaps the NFC mobile phone will lead a user-centred IOT.





## The landscape of radio

How can we use the increasingly radio-saturated landscape for creative or functional purposes?

This is a central issue for ubiquitous computing where computation is embedded, often invisibly into the environment



What is everyday?



## The landscape of radio

Landscape of radio | workshop | Thursday 15th of march

This is the work of Knut-Jørgen Rishaug.  
He's been looking at the way people think about their daily activities.  
And the ways this crosses over with the use of radio/wireless infrastructure.





## Playful RFID

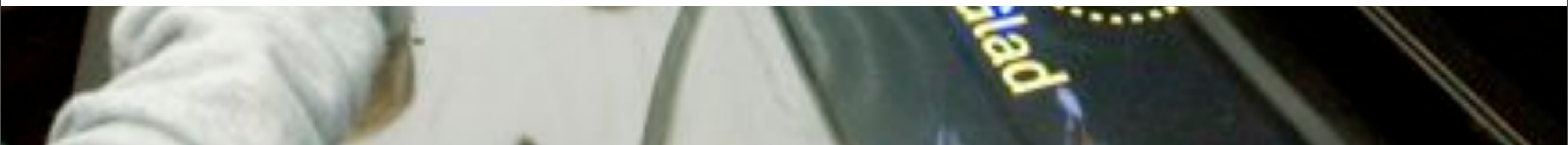
Playful interactions in RFID toys or consumer electronics.

RFID offers the opportunity to have action at a distance, batteryless and 'active' objects with memory, and the use of natural materials without obvious 'technology' on the surface. How could we use these attributes to make games, toys or playful products? The focus here should be on immediate, simple, playful, 'magic'.





## Playful RFID



We have experimented with 'toys with identity': a table where characters can trigger emotions by placing them on different spots.





## Playful RFID

The physical characters match those on screen, and provide a direct way of manipulating media.

The table uses RFID technology and lets us think about how we can use objects that have behaviours beyond their physical form...





## Playful RFID



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During our demonstrations we had about 800 people testing it out, and kids piled five deep to reach the characters.

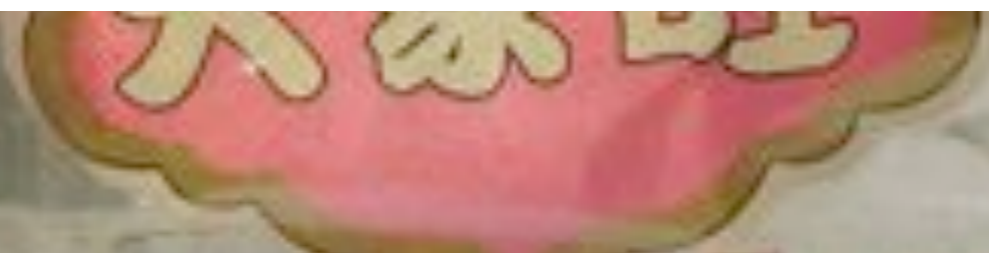
Although this is not based on the mobile phone, it has shown us patterns of use that allow us to move forward and design new phone-based interactions.

In particular it allows us to see that people are generally very adept at relating physical objects to digital content.





## Connected products



Integrating services, infrastructure, community and online brands into physical objects?

RFID is beginning to enable cheap – even disposable – products that have identities and connections to a network. This project should investigate the early opportunities of having simple identities and interactions in cheap and ubiquitous physical products.





## Connected products

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How does the nature of distributing physical products change when each product becomes a service or brand touchpoint?

What might we call this new class of service-objects, product ecologies?





## Connected products

One of our students experimented with skiing products that were all touchpoints to a brand.



## Connected products

He prototyped a system in China to introduce local cultures to cross-country skiing.

Including touchpoints at ski-runs.





## RFID and the everyday

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In what ways will RFID be entwined into everyday behaviour?  
RFID is a 'cheap and dirty' technology. cheap, small, no battery, embedded in anything.  
Also limited in range, little data, susceptible to being broken, easy to hack.

We see it quite like SMS, a platform for building lots of everyday stuff on top of.  
Like the SMS protocol, RFID is incredibly simple, and it may similarly lend itself to being used in ways we cannot predict or design.





## RFID and the everyday

But RFID is a very contentious technology because of these 'features'.  
What happens when our belongings have unique digital ids?  
How might 'trackable' objects affect our everyday social behaviour, and how might people subvert these affects?



[www.nearfield.org](http://www.nearfield.org)

If there is one message for this workshop, get out in places, with people and with things.