Proceedings of the Nottingham Symposium on Connecting HCI and UX

19th-20th November 2015, Mixed Reality Lab, University of Nottingham, UK

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Introduction

In November 2015, a two-day Symposium was held at the Mixed Reality Lab, in School of Computer Science, University of Nottingham, UK to discuss the connections between the activities of academic Human-Computer Interaction research communities and the work of professionals designing digital interactive products and services in industry – often working under the broad term 'User Experience' but also 'Information Architecture', 'Interaction Design', 'Service Design' and so on. The meeting was organised by Stuart Reeves (University of Nottingham) and Sara Ljungblad (University of Gothenburg / LOTS design studio) and was supported by EPSRC via Stuart's Early Career Fellowship (EP/K025848/1).

Our initial abstract for the symposium was as follows:

> "Academic HCI research and industry UX and interaction design (UX&D) communities seem to share some common interests based around evaluating, designing and building interactive technologies, albeit for very different purposes. Research in academic HCI often *suggests* some level of operationalisation or relevance for 'the practitioners'. And sometimes it is assumed that there *could* or perhaps *should* be a defined link between the innovations and products of the academic community, and those of UX&D professionals. Yet each community has its own distinct and often somewhat parallel forms of language, stakeholder concerns, constraints, goals, ways of working, and constellations of methods and tools. This two-day symposium proposes a broad exploration of this topic."[1]

The impetus for the symposium came largely from a meeting between Stuart and Sara. Stuart's motivation has been from 5-year EPSRC-funded Fellowship, which aims to broadly investigate this topic. Sara's motivation on the other hand came as someone returning to academic HCI research having worked for several years within an industrial design studio.

The approach taken to the topic was purposefully quite loose because of the great number of fundamental questions and uncertainties we encountered about topic scope, and language, when we began working up the symposium itself. Reflecting this, and also in order to seed the symposium we offered a number of orienting questions to (and suggested by) participants. These were as follows:

1. Are the symposium's call for an investigation into HCI / UX&D relations well-founded? What is the 'problem' here if any? Is the relationship actually 'working well', actually 'irrelevant' or perhaps a 'false dichotomy'?
2. Terminology and 'what counts' – who is an academic and who is a practitioner? Are these labels useful? E.g., what is meant by 'academic HCI research'?
3. What is the work / lifeworld of 'the practitioner'? – what do they *really* do? E.g., what are the constellations of methods / approaches / techniques that UX&D professionals routinely use? This includes broader matters of work practice, orientation, constraints (time, money, teams), project management, roles, etc.
4. How does this compare with the work / lifeworld of 'the academic'?
5. How does HCI research (rightly or wrongly) conceive of practitioner work?
6. How do practitioners conceptualise HCI and HCI research? (And how do they engage with it, if at all?)
7. What academic HCI research 'products' (e.g., concepts / theories / methods / findings) *have* found traction within UX&D professions and why?
8. What are the ways / methods / forms with which an interested academic might communicate with practitioners and vice versa?

[1] In this report, we use double quotation marks to indicate verbatim quotations from other documents and verbatim quotations from speech. Documentation of the talks and discussions has often been reworded for clarity.

There were also several potential outcomes for this symposium that we envisaged at the time, which we also suggested to the group of participants:

- Community building for this topic – i.e., getting this topic 'on the agenda' for HCI research.
- As a networking event, perhaps sparking off joint working (e.g., between academic researchers and also for initiatives between practitioners and academics).
- Strategies for getting more academics and practitioners onto the topic.
- Working out how future practitioner-oriented 'meetups' / direct engagements would be best organised.

Language and topic scope

Throughout this document there are a number of (unsolved and likely 'unsolvable') problems regarding a) the exact scope of the topic of the symposium and b) the ways in which we conceptualise and construct communities like 'academic HCI' and 'UX practitioners' *in and through* the language we use to talk about the issues. The problems are encountered as soon as we say 'academic HCI', 'HCI research(ers)' or just 'HCI' – terms that are often self-consciously used in this report and perhaps by some participants in these proceedings as a synonym, oftentimes, for (specifically) the ACM SIGCHI community; i.e., a set of people who attend and contribute to the CHI series of annual conferences. Of course, ACM SIGCHI is *not* 'the only game in town' but one among several communities that we might describe as concerned with HCI research in some way (e.g., the Association for Information Systems (AIS) SIGHCI, International Federation for Information Processing (IFIP) TC13 HCI community, etc.). Even taking ACM SIGCHI as an entity, there are also many research sub- and super-communities within this designation, although we might observe that academic communities in HCI and related interests tend to be conference-generated / conference-anchored phenomena (e.g., CHI, CSCW, Ubicomp, UIST and other conferences we might also describe with the word 'communities').

Equally, we might also call into question talking about 'UX' as a distinct object of interest, or as a distinguishable, delineable activity that may be 'practiced'. So just as our conception of 'academic HCI' is the product of glossing, so 'UX practitioners' – whoever they might be – also is a problematic gloss for even beginning to attempt to communicate on the topic. We might instead also identify 'UX' as both a diffuse and disputed term amongst a constellation of many shifting, overlapping and related ways of describing activities and communities (themselves with possible super- and sub- properties as well): 'IA', 'IxD', 'Service Design', 'UX Design', 'UX Research', 'UX Strategy', 'Experience Design', etc. (Whereas some time ago maybe these would be 'web designers' or 'mobile app designers'.) Firstly we could note that it is also possible that many people doing what we might identify as 'UX work' do not even employ these labels at all or identify with communities associated with them. Secondly we could note that in contrast with academic communities we speak of above, these designations are profession-generated not conference-generated ones (e.g., we don't speak of the UXPA community but a UX community that attends UXPA, IXDA and other conferences). Equally we may problematise the notion of 'practitioner community' and instead consider cross-cutting and complex groupings of professionals, the only common factor for which involves working within 'tech industries' in some way.

The bottom line, then, is that the very framing of the symposium and the language used to do that itself creates a bunch of troubles before we even start!

Nevertheless, throughout the rest of this document we'll need to keep using the terms 'academic HCI' and 'UX practitioners' in spite of the various problems that they bring with them—so the terms are best read with the caveats above in mind.

Participants

Like our approach taken to the questions we wanted to ask during the symposium, the way in which we invited participants was organic. Critically we decided that the topic was too vague to begin with anything that performed a kind of 'outreach' to those with little existing contact with or connection to academic HCI research. Primarily we wanted to first make contact with people who had some connection with academic HCI communities, perhaps as an active participant or as someone who was at least conversant with them. In that sense our group was skewed in a particular way, with a particular set of shared assumptions from the start (such as that this topic was *interesting*, timely and worth travelling for in the first place). And of course the group was also a function simply of who we (as organisers) knew or felt we could approach, those who responded to our invitations, and, of those we contacted, those who got recommended as potentially interested and important to try to get along to the symposium. In this sense there are several people we no doubt should or could have invited, but did not for the limitations explained above. With these caveats in place, here is the list of attendees and their affiliations:

- Elizabeth Buie (Northumbria University; former UX consultant)
- Torkil Clemmensen (Copenhagen Business School)
- Susan Dray (Dray & Associates)
- Rowanne Fleck (University of Birmingham)
- Colin M. Gray (Purdue University)
- [Remote] Keith Instone (UX consultant)
- Carine Lallemand (University of Luxembourg / FLUPA)
- [Remote] Gitte Lindgaard (Swinburne / Carleton)
- Sara Ljungblad (University of Gothenburg / LOTS)
- Stuart Reeves (University of Nottingham)
- Andreas Resmini (Jönköping University / Editor-in-chief, Journal of Information Architecture)
- Marty Siegel (Indiana University Bloomington)
- Simone Stumpf (City University London)
- Raphael Velt (University of Nottingham)
- Selena Whitehead (BBC)

This report

What follows for the remainder of this report is a largely unstructured account of the different points raised both by speakers and in discussion with them. Talk points raised by presenters are written in the third person. Discussion between the speaker and participants is written in the first person and indicated with the following style:

>> Name: Discussion point

Introduction to the symposium

What was the agenda for the symposium? In our introduction to the meeting we described our intention that the first day could be more **divergent** in terms of having relatively free / unstructured conversations in order to organically scope out the topic. This was to be achieved through speakers presenting on a range of themes that we clustered together. These themes were, for Day 1:

- Describing the state of practice today: How practitioners describe what they do / What is 'best practice' for UX practitioners?
- How UX sees academia / How UX practice might be able to impact academia?
- Academic understanding of practice; empirical studies of it, high level reflections on it
- Experiences, examples and descriptions of the 'gap' between HCI and UX

For Day 2, on the other hand, we suggested that we should attempt to be more **convergent**, or at least attempt to finish the meeting with some concrete outcomes in terms of 'next steps' and commitments to follow them. The actual outcomes of this can be found at the end of this report. We also grouped our speakers for the second day to discuss the following areas:

- Getting up to speed: covering the existing efforts of SIGCHI Research-Practice Interaction group
- Considering the academic situation in general (resources, funding, research trends, etc.) and education / pedagogy and how it relates to industry practice
- Looking at strategies for / experiences of bringing research to practice (i.e., gap bridging)

Needless to say that our carefully laid plan for topics and themes disappeared somewhat and in reality speakers each presented in ways that cut across topics.

Why did we organise the symposium? Our introduction Stuart offered a brief justification for the timeliness of meeting and its topic. We noted that this question of "why now?" was posed very much from an HCI research perspective. Firstly we argued that we must recognise there has been an explosive growth of the HCI community. We assume that the CHI conference is likely to be a good bellwether for this growth: this is indicated both in terms of the scope of research that takes place (for CHI, an increasing number of submissions of work etc.) and to a lesser extent the size of the community in terms of members (for CHI, conference attendees). Much of this growth could be attributed to increasing numbers of PhD students and newcomers to the HCI community. Yet it is natural then to ask what might happen when this growth tails off, when the number of PhD students graduating reduces and the community otherwise 'saturates' in terms of its growth potential[2].

A further point of reference for here has been a discussion that seems to continuously surface in the HCI community across many outlets: that of increasing diversification of HCI research, and relatedly the intellectual struggles concerned with what HCI researchers should be focussing on in terms of core topics or issues that describe what HCI research is 'about'; in other words discomfort over what the 'core programmes of HCI' is and how to present itself as a coherent discipline. Most recently this has been highlighted in an ongoing debate about the "Big hole in HCI research"[3].

[2] Stuart's note: this is a point raised in the past by Patrick Baudisch in the workshop "What to study in HCI" at CHI 2015

[3] Three ACM *Interactions* magazine articles are relevant here: 1) Vassilis Kostakos. 2015. The big hole in HCI research. *interactions* 22, 2 (February 2015), 48-51. 2) Stuart Reeves. 2015. Locating the 'big hole' in HCI

Linked to this, the final point raised here by our introduction was the tensions in the HCI community between what could be characterised as "saving the world" (i.e., making better interfaces, experiences, technologies, etc.) and "reflective critique" (i.e., the role of the academic to spend time reflecting critically upon the role of interactive technologies in society at large and perhaps suggesting radical alternatives).

What is the history of the topic of this symposium? It seemed important to quickly recap what work had occurred related to the symposium topic. As part of this we highlighted a few key points along a timeline stretching back to early HCI research in the 1980s. The first of these was work by Long and Dowell, who raised questions in the late 1980s within the HCI community about what kind of discipline HCI was to be – as they characterised it, a choice between craft, engineering or science[4]. While this was primarily about shaping up the identity of nascent HCI as an academic research community, it also has implications for setting up that community's relationship to practice and what model might be followed in establishing relations between practitioner and academic communities.

The next significant point is the Amodeus projects of the late 80s / early 90s[5]. Lasting a total of seven years, these were two large EU projects, a significant portion of which focussed upon developing tools for "design practice". A significant portion of the projects aimed to operationalise the contemporary HCI interests in using cognitive theory as a means for HCI research to develop models of users for the purposes of providing support to design decisions (e.g., Programmable User Models); the project also evaluated the efficacy of using cognitive modelling for design work[6] and means of capturing design decisions via design rationales work (i.e., documenting how design decisions are arrived at alongside the decisions themselves) and "Questions, Options, Criteria" design capture methods. As the report on the project notes, this was a critical period for interface design as computers moved from text-based interfaces to GUIs, with an attendant explosion in design complexity that faced those building user interfaces.

Since this work of the 1990s, there seem to be relatively sparse instances of research focus within HCI on the connections between academic HCI and UX practice or examination of what we might term 'practitioner work practices' within HCI research communities[7]. The next larger project devoted to some aspect of this topic is that of the NSF-funded Interaction Design Practice project (running since September 2011) led by Erik Stolterman and Marty Siegel at Indiana University. Finally we also discussed previous (ongoing) community-building efforts of the Research-Practice Interaction SIG within the CHI community, and added a note on the Interaction Design Foundation (http://www.interaction-design.org) which publishes HCI

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research. *interactions* 22, 4 (June 2015), 53-56. 3) Alan F. Blackwell. 2015. Filling the big hole in HCI research. *interactions* 22, 6 (October 2015), 37-41.

[4] Long, J., Dowell, J. 1989. Conceptions of the discipline of HCI: craft, applied science, and engineering. In *Proc. 5th conference of the BCS-HCI Group on People and computers V*, Sutcliffe, A., Macaulay, L. (eds.). Cambridge University Press, 9-32.

[5] One of the three aims was "To assess how integration frameworks, modelling techniques and the substantive principles they convey may successfully be transferred to and used by the design community." http://www.mrc-cbu.cam.ac.uk/wp-content/uploads/2013/02/amodeus2.final_report.pdf

[6] Victoria Bellotti. 1993. Integrating theoreticians' and practitioners' perspectives with design rationale. In *Proceedings of the INTERACT '93 and CHI '93 Conference on Human Factors in Computing Systems* (CHI '93). ACM, New York, NY, USA, 101-106.

[7] For instance Friess's work on persona use in design meetings: Erin Friess. 2012. Personas and decision making in the design process: an ethnographic case study. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (CHI '12). ACM, New York, NY, USA, 1209-1218.

research materials and courses online with the intention of bringing academic research findings to a wider practitioner audience – although arguably not necessarily representative of what is happening within what we might term the 'Interaction Design community'.

>> Andreas: It is important to distinguish this organisation from that of Interaction Design Association, a professional organisation for practitioners (or Information Architecture Institute or the UXPA). What was mentioned in this brief history has never really dealt with the "full stack" i.e., UX and not just interaction design.

Speaker session notes

Following this introduction, we then turned to our speakers for the session. Each speaker is presented here in the order in which they actually spoke during the symposium.

Susan Dray: "The View from Here"

- Susan's impetus for the content of her CHI 2015 talk on receiving the SIGCHI Lifetime Practice Award[8] was that she felt there was a sense of a lack of concern within the CHI community about practitioners and their work.
- It has been hard to get a lot practitioner participation at CHI historically. The 'gap' seems to be seen in the academic community but not in the practitioner community (which in some ways tends to devalue academic community).
- The practitioner group at the symposium is "very odd" because "we care" yet a lot of people in practice don't.
- We live in "different worlds" – everything is different from incentives (little incentive for practitioners to get involved with academic world especially within companies or even know where to start, and little incentive for academics to dabble in the messy problems in industry), time scales and schedules (practitioner timescales are "yesterday", versus the semester, quarter, term or research project), definitions of success, sources of funding, styles and 'best practices' (different ideas of what is the right way to work, and what work *is* – e.g., "rapid ethnography" which itself is a contradiction), political realities (who you have to curry favour with, where you want to go, etc.), and values, culture and expectations. This is Susan's "formulation of where this gap comes from".
- Seems like the engagement is more about academia coming into practice.
- Susan characterises practice as "'doing' HCI, User eXperience, Information Architecture, Interface Design / (or whatever we call ourselves) in companies"
- UXPA and SIGCHI are trying to build their relationship – Susan is trying to get that bridge working (she was director of publications for UXPA and now is VP At Large for SIGCHI)
- "We need to become engaged scholars and thoughtful practitioners"

>> Andreas: There are similar initiatives at the Information Architecture Institute – e.g., running a competition to get practitioners to work with researchers etc. The problem is visibility. UXPA, IXDA, IAI are all large. Another issue is fragmentation, there is no common front for these different communities of research or practice.

>> Marty: "Snobbery" is the word that comes to mind. In academia there are "silos of study". The mathematicians and physists are at the top, then come the life sciences, then the social sciences, then "the art people", and at the bottom are "the education people". This gets "permeated in the CHI community"; he has colleagues that self-describe as "scholars" as opposed to worrying about teaching. The "gap" is about a "total disrespect" for people who "do very different things". A new course implemented a few years ago is on "rapid design".

[8] See slides from Susan's Lifetime Practice Award talk: http://www.dray.com/wp-content/uploads/2015/05/FINAL-NOTES-to-send-Building-Bridges-Not-Walls-CHI-2015-DRAY.pdf

A YouTube video of the talk is here: https://www.youtube.com/watch?v=mM8RQ1zoMks

There's nothing in the (academic) literature that really tells you how to do research etc. in an hour or two. We don't understand the problems – there maybe needs to be some theoretical notions of these things (the gap) and why it's important.

>> Torkil: I disagree with the "dark picture" being painted. Business school students I teach don't necessarily have problems with applying HCI concepts to practice – they learn about "engaged scholarship" which helps (e.g., every project they do is with a real company). Instead it's the "context of the gap" that is maybe more important. We shouldn't necessarily mix all the problems university programmes have together (i.e., the generalised issue of academia-versus-industry-practice) – we could focus on the specific problem for HCI.

>> Andreas: Responding to Torkil's experiences in a business school. Being a designer, I argue that execution is "not there" for design implementation although is there for developing "business plans". I'm wary of framing this as "human-computer interaction". If we talk about "UX" there is a lot more there than "HCI". The problem is not a "how many clicks" problem.

>> Susan: We have to help people who "aren't in this room" to understand that corpus of "what we do that is on the table". In academia, HCI wants to have theories etc. but we are an applied discipline. Think about medicine – if you don't have biology your medicine is going to be very poor, but if you don't apply biology what is it?

>> Colin: Feels like in this conversation the student is the one who has to do all the "connecting". Having to make the leap yourself as a student to do this is hard. Why aren't programmes supporting this leap?

Selena Whitehead: "UX Research at BBC Digital – one researcher's view"

- Fist project worked on was on the Nokia 252; in terms of user experience evaluation was easier – they could assess that it made calls etc. This is where Selena has come from in terms of thinking about UX – from a very functional engineered approach.
- User experience is what differentiates things.
- Has worked on News app, Weather app, various responsive sites at the BBC.
- At the BBC a small number of researchers cover many online products across multiple devices (4 screens) and a demanding audience (BBC license fee payers).
- BBC's audience is "everybody" which is a major challenge all the time for them.
- BBC Digital UX&D Design Research Team (who work with wider UX&D at the BBC) – a small team supporting design work across a lot of products; to make things work practically, they do some research themselves, oversee research with external agencies and also encourage and support research designers undertake themselves.
- BBC R&D is the most academic part of the BBC's UX&D but contact with them is quite small / limited – so bridge building going on within the BBC technology strategy.
- In UX&D they go to conferences but industry ones rather than academic.
- Mandate of the Design Research Team at BBC – represent "the user" throughout the whole process perhaps sometimes against the wishes of "product".
- The Design Research Team – good proportion of their time is spent supporting immediate product UX needs but also looking to accommodate the longer view formative pieces by evolving their working practice.
- They use a range standard methods like usability testing, interviews, surveys, diary studies, ethnographies (when they can), etc.
- They have recently been supporting design sprints (e.g., week process of "understand, diverge, converge, prototype, user test") – the short timeframe focuses the mind but has its demands – favours small rapid changes and iterative work obviously
- The "long view thing" isn't excluded but product pressures mean there is more of the above going on.
- "Rapid research" or "active testing" that they do is a bit more controlled than guerrilla testing. This is about ensuring "easy access to user feedback".

- Selena implemented this “rapid research” on News app etc. – always checked by more formal rounds of testing (although less frequent).
- Having a shorter format (e.g., a day of research) makes it easier to get others involved in this – e.g., product managers, etc. – this also supports cheap fast iteration.
- Design research champions – are employed to spread awareness of the value of research and empowering others (e.g., designers) to do this themselves.
- Selena did a quick survey of their teams about how they find out about research: academic sources feature but not as much as they would like – and there are some resources that seem more accessible e.g., specialist websites and blogs.
- Only a couple of people had strong links with universities and indicated a bunch of resources they were unaware of.

>> Stuart: Visibility issue seems to come up again – it’s not about public availability but visibility

>> Andreas: There is a need for brokering.

- Barriers to using academic research:
    - Sheer volume can be daunting – project timescales mean they are not often afforded the time to familiarise themselves and make use of the relevant academic resources as they would like.
    - How stuff is written: academics write for other academics

>> Stuart: Why would academics write for anyone else? A fundamental question. Academics don’t get credit for writing for non-academics. It doesn’t get evaluated by the people that do our evaluations.

>> Selena: If you could demonstrate a link between research you did and its use in practice, that would be good.

>> Rowanne: How can we know that / prove it?

>> Selena: This is an issue for them as researchers too – designers can more easily show what they did, good research work is invisible. When stuff goes wrong the research gets questioned.

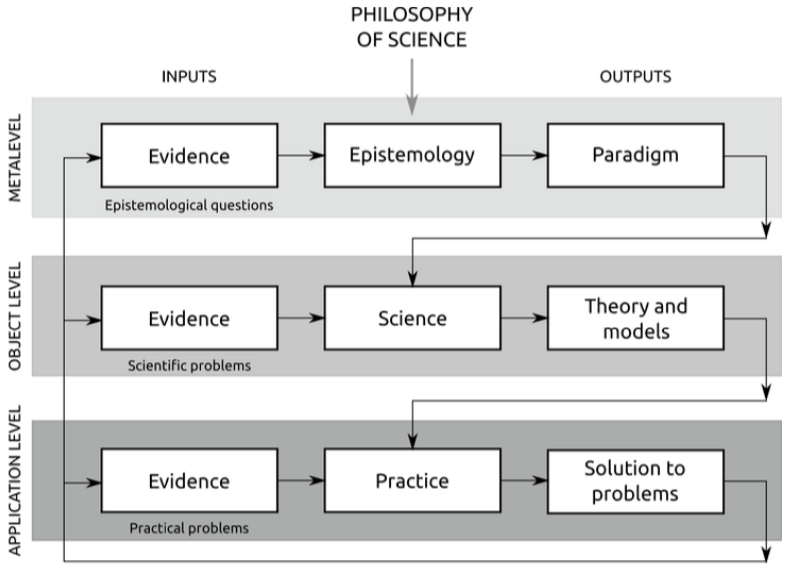
    - Searching for research is a problem: terminology differences.
    - Presence on social media is often limited.

>> Stuart: Although academics are increasingly using social media, it’s another thing where there is no incentive.

    - Application of academic research isn’t always obvious.
    - Hard to get a quick overview of how robust the findings in academic work is.
    - Knowing peer review consistency is hard for practitioners.

Andreas Resmini: “Making the gap visible: The M3 model and the necessity of a common language”

- Has the opposite problem to what has been discussed: having been a practitioner and going back to academia, has a “punk” attitude to academic career – so you get less visibility in academic terms. There seems to be an “either-or” where we can’t appease “both ends”.
- His book “Pervasive Information Architecture”; when he wrote it design in US was still more a web and mobile community of practice, while rest of world was moving more into a ubiquitous / pervasive mindset where UX is deployed across digital and physical and different spaces.
- Book “Reframing Information Architecture”.

- From his point of view "UX is this very very indefinite beast that is difficult to assess" – and instead "uses it as a basket", drawing on work by Peter Boersma[9].
    - UX is a "large horizontal layer" where many vertical skills / capabilities come into different mixtures / balances etc.
    - E.g., IA, IxD, Visual Design, CS, copywriting, etc.
- With Keith Instone started doing meetups / sessions at difference conferences to figure out how to bridge practice and academia[10]. Even though information is available, practitioners "don't really go there" because there is the issue of understanding what is relevant to them.
- Two gaps: 1. The perceived value that academia (education and research) has for practice, 2. the perceived value that conversations in practice have for academia.
- No single point of entry to the problem – but an incapacity to build any common shared understanding of the field or what we are trying to do.
- Community of practice of UX is somewhat insular and subdivided into silos / specific groupings that are distant from one another.
- Many people who are well-known within UX communities are not necessarily important for what they do – they may be quite distant from "the control room", i.e., not directly making design decisions for technologies that impact us in our everyday lives.
- Practitioners are constantly reinventing themselves to remain relevant to business.
- Academic silos and cultural fragmentation – there are many different pushes and pulls for anyone interested in the symposium topic.
- Need to consider the different layers that we might have in conversations with practice (see "Reframing Information Architecture", image below used with permission of Andreas Resmini):
    - 

- Contrasts contemporary IA with classical IA – and how contemporary IA brings in thoughts about cross-channel user experiences (practice), systems thinking (theory), postdigital (paradigm).
- Has been using this model as a way of working out how to pick apart how discussions with practitioners proceed and avoiding talking at cross-purposes (cross-levels).

[9] See Hobbs, J., Fenn, T., & Resmini, A. (2010). Maturing a Practice. *Journal of Information Architecture*. Vol. 2, No. 1.

[10] See http://www.asis.org/Bulletin/Aug-10/AugSep10_Resmini_Instone.html

- Practitioner conversations tend to flatten all "three layers" (metalevel, object level and application level) into a single thing: practice. Practice begets theory and paradigm at once.
- The M3 model might enable the conversation to be approached in a layered way. Uses Stewart Brand's layers of change model of "How Buildings Learn" as comparison – we may be talking at the layer of 'stuff' in houses that constantly changes.
- The UX community tends to recogninse writers and speakers because there is no real way to acknowledge 'doers'. Very few practical things that emerge from practice with names associated to them (due to NDAs, etc.) – therefore being a good speaker / writer is the relevant way to judge people.
- A language of critique is necessary to mature and identify the object of that. I.e., moving away from designer-as-issue rather than identifying issues with design process itself.
- UX conferences are normally practitioner-only conferences. There are no real incentives for academics to be there, but not being there means we can't start a conversation.

Elizabeth Buie: "UX practice: A few things academia may be missing by concentrating its research on the major players"

- Experience in large company (gov. contractor), smaller companies; experience at CHI and practitioner conferences.
- What we hear about in terms of practice at places like CHI are "the big players" e.g., Google, Microsoft, etc. But these are unrepresentative – they have a budget for research, money to sponsor / collaborate, awareness of HCI research, larger teams, access to users, visibility in HCI communities, in UX communities and wider world.
- Most UX practice is different: competitive contracts, smaller teams, often have to work on multiple (different) projects or share with another company, often hired to fill gaps in other organisations (e.g., larger companies teaming with smaller UX firm or UX consultant), little or no understanding of HCI research – there is neither the time nor the interest in understanding academic papers / work.
- Involved in SIGCHI efforts since 2010 (i.e., Research Practice Interaction, RPI[11]).
- The point is to build bridges not change academic research or practice.
- "Practitioner takeaways" was one idea for something to add to academic proceedings – but wasn't possible to do this within the standard CHI talks timeframe.

>> Susan: There has been an effort to have "takeaways" for Interactions and UX Magazine.

>> Elizabeth: Referenced Sauro & Lewis paper that inspired the idea for practitioner takeaways[12].

>> Marty: A lot of these ideas (e.g., building bridges to practice) are coming from the academic side. We need to use our own user-centred methods to accomplish these goals – somehow we abandon those methods.

>> Andreas: We (UX – HCI, etc.) discuss based on process not outcomes. We don't have an equivalent to the history of design i.e., a set of artefacts that are 'canonical'. We need a middle ground between the "genius mode" and the process mode. A history through artefacts.

>> Colin: Similar issue in instructional design – a lot of discussion of process but never of artefact. International Journal of Designs for Learning was intended to offer new form of scholarship in instructional design via the "design case" and how it came to be. In architecture

[11] See http://luminanze.com/blog/conferences/cfp-chi-2010-workshop-on-researcher-practitioner-interaction/

[12] Jeff Sauro and James R. Lewis. 2011. When designing usability questionnaires, does it hurt to be positive?. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (CHI '11). ACM, New York, NY, USA, 2215-2224.

and art/design fields there is very good documentation of final product but rarely something that contextualises those examples.

>> Stuart: Is Andreas saying that UX pros tend to talk about the processes by which they go through their work and not the artefacts themselves?

>> Andreas: Yes.

>> Colin: Also process is very narrowly defined or only in the sexiest possible way – you don't see failure analysis or rich iteration – but rather "this the magical path that led to our final design". You want to make your firm look good.

>> Andreas: It's a selling pitch.

>> Stuart: But selling is important e.g., Mike Montiero's talk at IXDA 2015 was all about selling design.

>> Andreas: What we are talking about is the "normal talks" that are not about "selling your work" but actually they are often about selling pitches for your process or for the way you solve a particular thing. This is partly due to NDAs etc. The details and practical cases are not allowed to be said at conferences (you never know how something will be received etc.).

Sara Ljungblad: "Beyond ICT: How industrial design could contribute to HCI"

- Academic / research background, but started to work with LOTS design (a strategic design consultancy) – *industrial* designers not interaction designers or UX people. Realised that there is a fundamentally different view on design and design activities to the designers she was working with, and what kind of thinking about design is surfaced in HCI.
- She was studying how LOTS did design of a bikesharing system.
    - Very overlapping design methods.
    - Visualisations used were kind of like service blueprints or customer journey.
    - Researchers conceptualising or theorising around this practice makes these quite concrete / delimited. Instead the people making these had not heard of these conceptual constructs.
    - They used their design tools to connect with others on the project / collaborative work.
- Practicing designers are doing something and researchers are trying to understand this practice but in ways that don't necessarily fit – we don't necessarily look at the "right things" i.e., actual practice.
- Industrial designers' design skills were more about understanding work routines and the 'bigger picture' (although they did do the interaction design too).
- She asked the designers what the design object is, and how design is misunderstood by clients.
- She has been trying to get practitioners to reflect on HCI through joint publication, and enable practitioners to contribute to research.
- The question is "what can we learn from practitioners?". Moving away from the academic desire to rapidly publish stuff.
- She has done seminars with design-oriented researchers: found that they all do UX-related stuff but it is not even called that. The terminologies are very different. Areas seem very closely connected but divided by language.

>> Marty: You said "practitioners are experts" – although true, it's true in a narrow sense: they are experts in their particular practice in their particular setting. But academics are interested in generalisations. A challenge is to figure out what generalised statements can be made that cut across. Maybe the nature of practice is that it's always specific and this can't be done?

>> Andreas: Mapping issues. Something that comes out every time they have conversations between practitioners and academics is that the HCI framing of the problem means that much potential UX work does not fit into the CHI view of the world (e.g., UX papers may suffer rejection because there is no obvious relevance e.g., "this is a business paper" etc.). Maybe we need a UX-centred academic space? A lot of things pertain to the area but don't fit inside the HCI framing. E.g., anything IA would need to go with information science or business research but neither really fits.

>> Stuart: Finding places to put your outputs that might be more UX-y or practitioner-oriented e.g., Journal of Usability Studies – do practitioners even read it? My naïve understanding is that a blog post or website is more likely to get read.

>> Carine: They are always looking for more reliable sources of information – complaining that blogs etc. are in some sense giving not enough solid content.

>> Elizabeth: Practitioner takeaways tend to be embedded in the papers so hard to get access to. Relevance to practice is becoming a more prominent part of UK universities.

>> Carine: Risk of practitioner takeaways – a research paper is not by itself necessarily evidence of something – so it is not 'proof' of something if it's in just one paper. Extracting results may run the risk of disseminating some stuff that is not consolidated.

>> Andreas: It'll happen anyway.

>> Marty: There is a directionality to all of this. We're trying to take research and educate the "poor practitioners". Why aren't we realising that it needs to flow the other way? E.g., practitioners raising issues back to academic research.

>> Stuart: UX practitioners have a well consolidated set of methods – in contrast with the fragmented nature of research in HCI. We don't know what they do.

>> Rowanne: Practitioners might look at usability studies and say they are rubbish – they (academics) "don't know" how to do one. They are different problems that they are solving though.

>> Andreas: The leading preoccupation is the bottom line for UX industry – the one thing that makes or breaks work is the bottom line for a client. This means that measures and metrics are valued.

>> Sara: Practitioners use overlapping methods to be sure that the thing actually works – for robustness and a big difference with academic approaches.

Torkil Clemmensen: "How do usability professionals construe usability and UX?"

- For practitioners a big problem is understanding different academic traditions, sifting through the volume of academic stuff, etc.
- UX definitions cover a lot of what people say and think about the use of technology – they really cover a lot.
- There are systematic differences in how different groups of people think about technology, usability and UX – not a surprise.
- ACM SIGCHI is not all of HCI.
- UXPA conference is not interesting from a research point of view.
- Been part of usability days to communicate his research to non-academics.
- Works at a Danish technical university – but got sick of people only ever talking about artefacts and so on, and not people.
- Not sure what HCI is, but it's clearly related.
- You can learn from lots of professionals – HCI is a young thing – a lot of people are academically "stupid" but this is to be expected because HCI is so new and it's not deeply embedded on taught programmes as much.

- It is helpful for academics and practitioners to self-reflect upon what they do. E.g., UX professional survey.
- Similar situation to UK as in Denmark: there are no really big companies, they are all small etc.
- Torkil is interested in psychology as a "science of design" (from Carroll's paper way back[13]).
- His view of UX professionals is as a kind of psychologist; they do design (not necessarily artefacts, but maybe some interaction design).
- A professional needs to make an income – so it has to be justifiable work.
- Academic HCI and UX practice in different parts of the world have different histories in different parts of the world.
- Is the UX profession an evidence-based profession? Not sure it is like being medical doctors – not sure they should be going in that direction. It depends on the area of application and which direction you want to go in.
- Usability as a scientific construct – there is no way you can do that – a "real positivist" looking at this will see that they measure different things. One must give up the usability construct if one is academic about it.
- Usability as a science has not really gone anywhere.
- What universities do is produce concepts that other people use later and they may not be aware of them. This is not a problem necessarily.
- Presented cross-cultural study of UX professionals' thinking in different countries (China, Denmark, India). Using their data they applied four UX classification systems to participants' descriptions of UX in order to do content analysis – ISO UX definition, objective vs. subjective UX, system-oriented UX, human experience of technology.
    - Very few descriptions of UX couldn't be put into system-related, user-related or content-related. The definitions thus cover "everything" which is not necessarily a good thing. So, you can use whatever definition you want and they don't "do anything special".
    - UX pros talk more about "users", developers and users talk more about "context". A major assumption for a UX professional is a special ability to represent "the users" in some way (or think "like users do"). So in theory the users should have the "same profile" as the UX pros. It didn't turn out like that in their study.
    - How to explain the results? Why do UX pros focus more on "subjective UX" and "users" that "context"? The UX pro's work (at least in Denmark) is primarily about satisfying your client so you focus on "the user".
    - We should have more studies that look at cross-cultural UX understanding.

>> Stuart: My understanding of UX is that it comes originally from a phenomenological perspective. The way that UX is used (to me) is to mean that it's expansive around the interface itself – before and after as well as 'the use'. But this seems different to an actual phenomenological position.

>> Andreas: The term UX was invented by Don Norman.

>> Elizabeth: If you search the term you find it used long before[14].

>> Susan: It's the same as design research – it was not 'invented' by IDEO.

>> Andreas: I don't think phenomenology was there at the beginning – but it's clearly a way we can use to discuss it. Few people discuss it from a phenomenological point of view.

[13] Carroll, J. 1997. Human-computer interaction: Psychology as a science of design. *Int. J. Human-Computer Studies* (1997) 46, 501—522.

[14] See https://www.interaction-design.org/literature/book/the-glossary-of-human-computer-interaction/user-experience-ux

>> Torkil: Our current ideas about how to define UX academically are not very good compared to how people experience technology.

>> Andreas: You see human factors and ergonomics become usability at a certain point when we have digital artefacts – and there is a transition from usability to user experience as there is a move from performance to matters of satisfaction and enjoyment. But we can't really talk about scientificity – I can't really say why this particular object of design is 'good' in scientific terms – and design and architecture has long come to terms with that. But you can have a scientifically posed conversation but something the object of which is not scientific in nature.

>> Torkil: The purpose for me is to produce research that enables academics and practitioners to self-reflect upon what they are doing. It's not only about techniques or theory but also about understanding "who you are". It's about having a sense of identity.

>> Gitte: Even in psychology we have many subdisciplines – if you can't refute it it's not positivist.

>> Andreas: (Design) is not based on positivism. We have traditions in design – a way to judge based on those traditions, which change and are challenged. UX doesn't have those things that can be described and discussed. I have trouble putting boundaries around what I'm talking about in UX.

>> Gitte: There is no common literature and vocabulary that we all use.

Colin Gray: "Building a Multidimensional View of Professional Practice through Trace and In Situ Data Collection"

- His interest in the topic comes from focussing on design education and instructional systems technology.
- Originally was a design practitioner well before becoming an academic researcher.
- What are our limitations as researchers? What are the limits of science and should we strive to be scientists in all ways?
- He thinks there is an assumption at CHI that all conferences (about similar topics) should strive to be like CHI – e.g., UXPA, IXDA etc. But, you go to a practitioner conference and you know you are at a practitioner conference – you get to see artefacts of work (e.g., "beautiful interfaces on the slides instead of bullets!") – as a designer he misses out on "seeing real things" instead of just talk on a very theoretical level (as one gets at academic conferences).
- He thinks it is important to go out and understand design practice on its own terms. Not doing this has "become entrenched" – too often we talk about practitioners but not including any of them in our conversations.
- In HCI, research through design, research on design, design research etc. often claims to be an insight into professional practice or design practice generally. But it's often a simulacrum of this. This design research often takes place in an educational sphere, not using professional designers but students, etc. Insights are not knowledge gained about professional practice.
- We often do research on students – and assume this applies to design practitioners. This is a problem of access as much as anything else (e.g., NDAs etc.).
- What dimensions of practice should we consider for study? Work practices are important – we just need more access to these (e.g., see Liz Goodman's work[15]). But there are other aspects to consider that could be fruitful. For instance: What is the nature of professional UX organisations? What are the UX work environments like and design

[15] Elizabeth's PhD thesis: "Delivering Design: Performance and Materiality in Professional Interaction Design", University of California, Berkeley, 2013. http://escholarship.org/uc/item/31w6q6x3

cultures and how do they come to be? How do UX practitioners communicate? How are they certified and educated etc.?

- Colin is trying to now create a comprehensive undergraduate programme for UX. What do these people need to know?
- How can we access the various dimensions of practice outlined above? In-situ observation can be done – figure out "what life is like on the other side" – so defamiliarising our academic environment – it's not the only way the world works.
- He is trying to think about scaling up his initial exploratory studies of practitioners (that involve, say, a dozen interviews). One way to scale is in trying to collect trace data from different formal and informal UX communities (such as social media, online forums, etc.).
- Work so far: he has developed some tools / schema for talking about academia-practitioner relations in various ways[16].
- Future questions: How are we educating future practitioners? What do patterns of self-learning look like? What are they getting at practitioner conferences etc.? What kinds of holes are there in the practitioner environment? And how are we able to examine such this via analysis of larger sets of trace data?

>> Colin: If we are going to talk to the CHI community we need power, and "N size" is power and impact for some people in CHI.

>> Andreas: How to make an impact? His students are collecting information about IA + UX conferences – so as to do quantitative analysis of trends, agendas, etc. It is necessary to do this to build up momentum.

>> Colin: Access to practitioners and what they can tell you on-the-record is problematic. Building up an international sample is hard.

>> Andreas: We should try to use our group to network with the UX community.

>> Torkil: You want to quantify practice?

>> Colin: Not really – proposing to qualitatively examine social media data that is about practice e.g., Facebook or Twitter interactions. E.g., looking at occurrence of topics to get an insight about what is getting talked about.

>> Torkil: The concept of practice is very hard to make into a quantitative construct – but you are quantifying because you are measuring – and using this as an indicator?

>> Colin: Some people are only swayed by N size – and you have to use that as leverage in certain situations – the information science community has a practice of doing this. He is suggesting combining this with qualitative techniques.

Marty Siegel: "Many People Talking and Few Listening: Reflections from a Four-Year NSF Study on Design Methods"[17]

- Marty relates a story that helped inspire the work he is doing now.
    - He was conducting visits to a number of companies on the West Coast of the US, interviewing UX designers / researchers about their practices.
    - While interviewing someone at Airbnb, Marty remarked that, being in San Francisco, Airbnb must get a lot of people wanting to talk to them about their practice and how UX things are done at Airbnb.
    - But: Marty was the first one to speak to them. This seemed surprising.

[16] E.g., see Colin M. Gray, Austin L. Toombs, and Shad Gross. 2015. Flow of Competence in UX Design Practice. In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems* (CHI '15). ACM, New York, NY, USA, 3285-3294.

[17] http://www.uxdesignpractice.com

- Presenting some findings from their NSF grant on studying interaction design practice – although he poses these in deliberately more provocative ways for the purposes of the presentation!
- "Most academics who develop tools for practice don't know enough about practice"
    - They think they know about practice but they don't.
    - To use an analogy: if this were the medical profession you would have people teaching surgery who have never done it. Would you go to them if you needed surgery?
    - There is a sense in which practical courses in UX or HCI can be looked down upon.
    - It's not just one-sided though: there are people in practice who view things in something of a narrow way, have idiosyncratic approaches that are not very generalisable etc.
    - The way most methods and tools are developed is unsatisfactory: the use of students as test subjects rather than real practitioners in real settings.
- "To understand practice we need to understand more than methods and tools – we need to study the entire practice such as time, resources, business requirements, etc."
    - These things are situated in a complex system of activities.
    - They often impact our understanding of practice to a large extent.
- "Practitioners tend to use tools and methods in ad hoc ways" – and not necessarily in the way that they were intended / designed by researchers.
    - No loyalty to one method – if it works and is useful they will use it.
    - They will pick-and-choose – they will use parts of methods only if necessary.
- Colin's bubble-up and trickle-down model – a model of appropriation, abduction and situated action[18]. The main point is that there is *slow movement* in all directions.
- "From where do practitioners get their information?"
    - Not from CHI – they couldn't find anyone who went to CHI.

>> Elizabeth: Back in the day, CHI was the "only game in town"

>> Colin: Some of the research respondents did say they went to CHI but in the early 90s

    - They do read magazines and blogs – and they are interested in academic research and how to appropriate it, often with something of a misplaced but high regard for academic work.
- "Students like discrete methods".
    - Experienced practitioners have a "flow" to what they do and methods need to be flexible and contextual.
    - Things don't "fit into little boxes" but rather as a natural part of what they do – if we are trying to create things for practitioners then we need to pay attention to this point.
- "It's ironic that those who create methods for user-centrered designers rarely employ user-centred methods to understand the designers for whom they are designing!"
    - It's like they don't believe in their own field.
- "Might we need a new kind of scholar-practitioner – someone who works in both worlds".
    - E.g., someone like Liz Sanders[19].

[18] See Colin M. Gray, Erik Stolterman, and Martin A. Siegel. 2014. Reprioritizing the relationship between HCI research and practice: bubble-up and trickle-down effects. In *Proceedings of the 2014 conference on Designing interactive systems* (DIS '14). ACM, New York, NY, USA, 725-734.

[19] Sanders, L., and Stappers, P. J. Convivial Toolbox: Generative Research for the Front End of Design. BIS Publishers, 2013.

- We might need a new kind of PhD student – trained to play both roles. They exist in sciences e.g., physicists or astronomers who are great science writers for the public.

>> Torkil: Don Norman is maybe someone who fits your description of the scholar-practitioner – someone who reaches a large audience and writes for general audiences.

>> Stuart: Norman seems to be the only point of common reference between academic HCI and UX practitioners – based on my experiences at UX practitioner conferences.

>> Marty: Colin looked at understandings of affordances and affinity diagrams amongst practitioners – which seem to be two concepts that have "made it" and people were familiar with.

>> Stuart: The ISO Usability standard has affordances in.

>> Colin: But no practitioners can trace beyond Norman and affordances.

>> Susan: But who cares? You only care if it's useful.

>> Andreas: The issue with Norman is that it's "just him" – and is an establishment figure. Marty mentioned a disconnection between teaching and the doing of design – this might mean a move back to the idea of the design studio and away from the HCI and CS tradition that presumes different methodologies, different approaches, etc. It's complicated.

>> Marty: In a university this is "the way we do it" – but it's the only way which works. To use an analogy: it's the "chef method" rather than the "cook method". In the early days of cook training they look like they are out-performing the chefs – they create things, have "the recipe for the chocolate cake", etc. But in chef school the cooking does not start with a recipe but developing understanding of the practices of cooking broadly – so the first chocolate cakes are awful. In the long run the chefs go way past the cooks.

>> Torkil: There are lots of studies of medical students that show that when they go into practice there is a 2 year gap, a "reality shock", where you live in two different worlds during their transition into the profession. In Denmark they tried to make the education more clinical / problem-oriented. Is that the solution? Maybe for some specialities, but not necessarily for those going into research.

Stuart Reeves: "Formatting design problems in UX practitioner work"

- Has been looking at UX practitioners of different kinds. Have been triangulating stuff from various resources e.g., attending practitioner conferences and UX meetings, talking to practitioners, observing user research, getting UX certification, reading UX textbooks, etc.
- His position in thinking about UX practice: ethnomethodological orientation – i.e., interest in understanding organisation of work practices such as methods of reasoning for UX professionals and methods of reasoning for HCI researchers.
    - Have published paper on notions of science in HCI related to the above[20].
- The role of "formatting" in UCD work – what he thinks UX practice involves. Started to think about the methods that are used in everyday practice.
    - Set of criteria / constraints that are applied to design problems and user centred design work. How would you describe those? This might be a way to articulate how UX practitioner work is different.
- The method that is applied formats the design problem that is being tackled – there are design problems and these need to be tamed in some way, shaped to fit working constraints.

[20] Reeves, S. Human-computer interaction as science. In *Proceedings of the 5th decennial conference on Critical computing* (August 2015).

- A set of questions can be posed in order to describe how UX methods are formatted to certain problems: modularity, time, personnel, competencies, findings, cost.
    - Modularity, e.g., is a given technique or method self-contained? E.g., usability testing has a certain cost, has a certain set of personnel, set of competencies that are required, and produces certain kinds of results.
    - Personnel and competencies are separated out because people can wear multiple competency "hats" for a given approach.
    - The methods used produce certain kinds of findings that fit within a particular style of report or presentation back to a client.
- Formatting takes place because it makes things predictable – predictability is a key factor.
- Academics concern themselves with similar matters – they have their own methods of formatting problems but these are not aligned with UX practitioners.

>> Elizabeth: There is something important that is missing here and it's access to users. Recruitment and "do you have access to users". In some cases e.g., government work, there is no access to users so you have to do your "best guess".

- Started to think about how academics think about design practice and design work.
- One view is that of Herb Simon where problems in the world define some sets of solutions – some design space that you can systematically explore in a computational way. Inspiration of much early work in HCI.
- Comparison with Cross – where there is a mutual relationship between design problems and design solutions – so in finding solutions you redefine the problem – a far more complex situation.
- But there might be issues with this model when thinking about how the constraints of UX work format design problems. What would it look like if this mutually constituted relationship between design problems and design solutions were subject to those formatting processes? Models of design don't seem to take this constraint-based formatting into account.
- Following this, what's the relationship between HCI research and the formatting process of the UX practitioner? At what points might HCI research be used in practice and in what ways? Can categorise these (possibly) into four different kinds / levels of "questions" that could connect HCI research and UX practice:
    1. The "specific question" – something from HCI research that is used to explicitly answer in a clear way a particular implementation question. We could characterise this form of question as "which of these button locations results in more conversions?".
    2. The "directional question" – which is more like asking HCI for certain heuristics and principles to follow. This could be expressed in a form of question such as "where should I place this button?".
    3. The "confirmatory or justificatory question" – a way of asking HCI research questions in order to justify / support / confirm an existing design decision. A way of characterising this as a question would be "I'm not really sure placing the button here is the right thing to do, but this person X needs evidence to support the decision". I.e., finding existing research that speaks to this.
    4. The "broad area question" – what has been done in this general area of research, what is known-about etc.? Could be characterised with the question "buttons seem important – are there different ways of using buttons, and what alternatives are there to buttons?".

>> Susan: You saw that with practitioners? I'm really surprised.

>> Andreas: That is the typical architectural conversation we are having – the what versus the how.

>> Elizabeth: They ask that question but not from academic research.

>> Selena: I'd expect the broad area question to be the one we'd go to academic research for. The other questions I'd expect to do as part of our daily practice.

>> Stuart: Can you really do the first one, even? Obviously I do not mean "literally buttons" – but rather that kind / form of question.

>> Elizabeth: Yeah, A/B testing as a standard practitioner technique would cover that.

>> Susan: I'd think that the last one – the broad area question – is done very rarely.

>> Andreas: But it happens quite often for the people I talk to. The first question is the typical A/B testing question that you can measure. The fourth one is a systemic issue that you have when you ask "what is it that you are doing?". The second and third questions are the result of design practice so they are not easily answered. That is where design comes in. It's equivalent to having different seat coverings in the meeting room. I don't think you can answer those in the way that HCI would want to.

>> Stuart: These are intended to be provocations. For instance, question 3 is an organisational matter – "I have a problem in my organisation with someone believing X" so might use outside evidence to support it.

>> Andreas: But do you need that?

>> Susan: I'm speaking as a consultant not within an organisation. Usually academic research would not be valued at all because then you'd really get shot down.

>> Rowanne: There would be a lot of academic research that could suggest an answer to these different types of questions – not necessarily an answer but a reason. Although not the first question because it would be far too specific.

>> Carine: These design decisions are so contextual that they would not be written in any academic paper. You would need to use particular methods to test things instead.

>> Rowanne: I disagree.

>> Stuart: I'm interested in this – whether academic research is always too specific?

Carine Lallemand: "Conciliating scientific requirements and relevance to practice: why is it such a dilemma for the development of UX design and evaluation methods?"

- Carine's thesis was about understanding how to conciliate scientific requirements (that we might face in academia) to UX practice.
- Recently published a UX design methods book in French – to support the French UX community.
- The conceptual shift from usability to UX is challenging. First wave of academic HCI/UX research developed various methods and tools – but with an emphasis on novelty (over consolidation) – and not much concern for "transfer to practice".
- What is the purpose / role of academia in the HCI/UX field? What are we trying to understand.
- The link between research and practice in HCI/UX is like that of biology and medicine – UX as an "applied science".
- We can think about UX practitioners as HCI's "end users" – so we should work out how to meet their needs. As such we should investigate design practice from a user-centred perspective.
- Academics and practitioners have different goals
    - Academia wants to: understand the phenomenon, validate methods, perform big and well-planned studies, control variables
    - Industry wants to: improve product UX, use cost-efficient methods, do frequent and small evaluations, look at real-life contexts

- Some researchers in academic HCI are aware of the above gap and are trying to develop methods that address the gap. To address the needs of UX practitioners, methods and tools should be flexible, applicable, cost-effective and lightweight.
- But there is a dilemma here for HCI research: if you design cost-efficient or lightweight methods for UX practitioners, are you working against developing validated research methods that adhere to academic standards?
- Her thesis argues that the majority of UX methods including those in academia often lack validity, reliability, and research consolidation.
- Practicability works against scientificity – e.g., Vermereen et al. show that the cluster of UX evaluation methods that have strong scientific qualities were associated with issues of practicability[21] (e.g., need of specific equipment, difficulty of data analysis, time consuming method).
- An open question: Instead of developing methods etc. for practitioners, maybe academic research should improve theories and concepts in UX / HCI.
- Consolidation of HCI's body of knowledge requires sound methods first – we (as academics) might damage our own research if we do application to practice.

>> Rowanne: What kind of academic knowledge? About UX research or about UX as a phenomenon?

>> Carine: Let's think about the example of studying / understanding user motivation. There is research on this – but to do this we need scales and tools that are not "low cost". If you want to go deep into the topic of motivation, the ways to do this take time. But such tools will not adapt to practitioners – which is fine I think. But if we do develop tools for practitioners we may damage the validity of our own methods.

>> Rowanne: I think HCI researchers who never consider practice do that anyway.

>> Stuart: There are different standards of what counts as rigorous work. Different audiences have different standards of appropriateness. The kinds of methods I've seen picked up by practitioners – e.g., contextual inquiry – is that they fit the situational constraints. But they are using different standards as to "what counts" as a good application of this.

- Developing valid, reliable methods must consider design practice as valuable inputs to the development of methods etc. (e.g., can't use students, as it's not valid or reliable).
- To be relevant to practice, academics in HCI could use practice as a topic-generator.

>> Marty: Why does research need to be relevant to research first? Why couldn't there be a research *of* practice (which could be a collaborative type of research between practitioners and academics)? Why do we need external validity?

>> Carine: If you want to understand a "good experience" you will need specific, valid tools if you want to build a model of UX (detailing what factors etc.). You need larger scales, more time-consuming – this is fine for you as an academic researcher, however.

>> Marty: You wouldn't expect the practitioner to use the, say, 20-40 item long scale. But why does developing this need to be separate from the context of practice?

>> Carine: If we don't expect practitioners to use, say, these long form scales, then it can lead to academics deciding not to develop them in the first place – because it "fits practitioners' needs". But this does not fit academics' need. Here's an example: The AttrakDiff scale[22] which

[21] Arnold P. O. S. Vermeeren, Effie Lai-Chong Law, Virpi Roto, Marianna Obrist, Jettie Hoonhout, and Kaisa Väänänen-Vainio-Mattila. 2010. User experience evaluation methods: current state and development needs. In *Proceedings of the 6th Nordic Conference on Human-Computer Interaction: Extending Boundaries* (NordiCHI '10). ACM, New York, NY, USA, 521-530.

[22] Hassenzahl, M., Wiklund-Engblom, A., Bengs, A., Hägglund, S., & Diefenbach, S. (2015). Experience-oriented and product-oriented evaluation: psychological need fulfillment, positive affect, and product perception. International Journal of Human-Computer Interaction, 31(8), 530–544.

has 28 items and 4 dimensions. Then the author developed a short version with 10 items with 3 dimensions. Although intended for practitioners, now academics are also using this scale. \

>> Selena: What is the reason the academics are using the short scale?

>> Susan: The question is, are you going to get anyone to answer all the 28 questions?

>> Stuart: This is like the idea of needing 5 users for usability evaluation. Which then goes down to 3 or maybe we just need the one user – which is better than none, or is it?

>> Carine: It's also a question of how we do research. Sometimes academics want to publish for the next three years on a single experiment!

>> Rowanne: You can argue this is the research field's issue – and peer review should validate the work that has been done. It could be that the appropriate methods are just not there and researchers shouldn't be using these methods.

>> Torkil: A sensitivity towards what is good academic research practice is vital to bridging between practitioners and academics. E.g., see usability testing: there are lots of papers measuring small details about workload, different protocols for instructing users, etc. This is because this is publish-able stuff. But at the same time in practice usability testing can be a free-for-all. We need better criteria for what we should ask of our research papers. My personal view of bridging is to be more aware of what you are doing.

>> Stuart: An alternative view is that methods used by practitioners and academics are incommensurate – just because usability testing looks the same does not mean that it is. Different constraints, different purposes, etc. Do they need to be considered as part of continuum? Where there is more rigorous and less rigorous?

>> Carine: But we might criticise practitioners for "having bad methods" but academics in HCI don't have good methods necessarily.

>> Marty: I don't want researchers to test practitioners' methods outside of their real contexts.

>> Susan: Experimental design comes from psychology, but is it actually being used correctly by computer scientists who don't necessarily know anything about psychology? Often it's not.

>> Carine: Psychologists are using user testing in the lab as the "gold standard". But research is showing UX is contextual and can't be assessed with validity in a controlled setting. If we are considering performance, cognitive measures, etc., you can successfully test this in controlled settings.

>> Torkil: I disagree that certain phenomena can only be studied in certain ways.

>> Carine: You can study experience but it may not be valid.

>> Rowanne: You can get insights but experimental design is specifically testing one thing – which can be useful in some situations. But understanding whole systems work causes trouble – you cannot take that out of context.

>> Torkil: But by which definition of UX?

>> Carine: I think it's something holistic.

>> Elizabeth: Usability is not but UX is.

>> Stuart: This is an epistemological question which has haunted HCI for ages – whether your experiment is a mere fragment of the "real world" which you can piece together bit by bit, or whether the "real world" is just lots of different phenomena and experiments are just another phenomena.

>> Andreas: This is a question for all sciences. Clearly experiences are either holistic or systemic, otherwise we're talking about the interaction design, usability, content management, and engineering parts of the thing – but that's not the experience. Experience happens on the users' side. We can disagree about how much you design it, but UX is definitely different.

>> Stuart: Organisational constraints mean that design can't be holistically done (it must be compartmentalised as a division of labour). When you are making something it takes time and a certain number of people, and involves certain activities. It must be made discrete.

>> Andreas: That's a process, not the outcome.

>> Carine: I think there are two main characteristics of user experience that make it invalid for testing in a controlled environment – first is the importance of context, second is the importance of temporality. Testing UX in a controlled setting is only testing UX at a certain point in time – but experiences change every day, every week, every month. Testing often relies on the memory of experience – but which is more important? The memory of the experience or the experience as it happens? My thesis looked at whether usability testing and expert evaluation were still valid for assessing user experience – the answer was "not really"[23]. The usability part, the performance part, the pragmatic parts of evaluating UX can still provide a good insight – but it's harder to assess higher level notions of 'experience'. For instance, we were evaluating UX of a camera and looking at need fulfilment ("how related do you feel to someone with a camera?") and a participant answered "I'm alone in the lab, I don't feel related to anyone!". Instead the participants had to imagine scenarios e.g., "I imagine I'd take pictures with my daughter so I would feel related to the camera" but this is "imagined".

>> Andreas: It gets harder with the move from artefacts to systems. E.g., if I'm going to the movies, and someone behind me talks during the movie, this might affect the dinner I have afterwards, the way I related to a mobile app I use to take me to the movies, etc. These things are hard to test in the lab. You can test how comfortable the seats are but that's just a piece of it.

>> Elizabeth: This is an old problem. Bob Bailey's book on human performance engineering[24] describes the importance of systems thinking (he says "A system is a group of people using some tools to accomplish some goals") – even back then it was recognised that thinking in terms of artefacts wasn't always enough. Education of practitioners about the validity of methods needs to happen. There are also organisational constraints at play – for instance in US government work you need special approval to collect data from more than 9 people at a time, so you have to create batches of usability tests that are define-able as different from one another and then divide your larger participant group into subgroups of 9 people and assign them to the (slightly) different tests. This makes validity an issue of course. But clients may need statistical significance to determine which design is better – which is not feasible validity-wise with these organisational constraints. Some basic knowledge about psychology is unknown in the practitioner community.

>> Carine: In the book I wrote[25] I have this dilemma: I don't want to speak like a scientist but I also want to communicate the methods well. So I present methods in "the way it should be done" but then factor in cost-cutting options. For instance I indicate "here you can make a trade-off" and not reduce validity, and indicate in other places where a method cannot be reduced (instead maybe they should use another method). For instance, many people want to use quant scales but only have 3 people – in which case we advise them that this method doesn't suit their situation and they should use another method entirely.

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[23] Carine's thesis: "Towards consolidated methods for the design and evaluation of user experience", University of Luxembourg, May 2015. http://hdl.handle.net/10993/21463

[24] Robert W. Bailey. 1996. *Human Performance Engineering (3rd Ed.): Designing High Quality Professional User Interfaces for Computer Products, Applications and Systems*. Prentice-Hall, Inc., Upper Saddle River, NJ, USA.

[25] Carine Lallemand, Guillaume Gronier, *Méthodes de Design UX – 30 méthodes fondamentales pour concevoir et évaluer les systèmes interactifs*. Eyrolles (October, 2015).

>> Elizabeth: The key is to distinguish between the types of usability tests that enable you to surface problems and others that enable you to say if "it's good enough". Almost nobody has a budget to ask if "it's good enough".

>> Andreas: It's all about the way you frame the UX problems. Is it a business metric (e.g., conversion)? Or performance? Or technically this or that is faster, cheaper, more redundant, etc. So, "is it better" is a complex question – we don't know how to answer this. And when you bring in users it changes many things – it brings in context (e.g., mobile versus laptop, social setting etc.).

Gitte Lindgaard: "Strategies for research -> practice" and "The academic situation in Australia and Canada"

- She is considering Australia and Canada within the talk since that is the context she works in.
- As an academic in Canada and Australia, resources must be fought for.
- Funding comparisons:
    - Funding is rare in Australia and is mostly federal and university only.
    - For Canada there is more bridging going on, and there are better links and collaboration between government and industry, for instance tender-writing often had to include some university research.
    - Outfits were set up at all levels of government in Canada to create links between universities and industry (e.g., startups).
    - In Canada, you only need 20% of your proposed budget covered by industry cash when applying for infrastructure money. These applications typically run into millions of dollars, so quite serious Fed. Government investments. No cash requirements for all other grant applications there.
    - In Australia, you can't even apply for a grant unless you have at least $25,000 industry cash. It is clear what that is doing to fundamental research.
- In Australia multi-disciplinarity is something of a foreign concept. There are no (to the best of her knowledge) no dedicated HCI degrees. Industry is not so receptive to research. However this may change with government requirements for industry collaborations.
- In Canada, university industry collaboration is well supported.
    - Alumni networks are important here in establishing this – "giving something back" once they have left. The alumni are invaluable for bridging. Many of the HCI alumni she knew were involved in industry-university collaborative projects when they were doing degrees to were later received by industry very favourably. Hanging onto alumni is therefore important. Knowing where graduates go is essential for establishing and maintaining industry-university links.
    - CapCHI is a chapter of CHI that supports this bridging between industry and university.
    - The federal government demands that industry include university researchers in many contracts.
    - Networking programs were important like student vacation placements and internships.
    - Internships also offered opportunities for PhD students during write-up periods. So they got to bridge between academic requirements (writing up the thesis) and industry requirements (doing their internship work).
- In terms of education and pedagogy, in Australia HCI is largely taught in computer science departments.

>> Torkil: Do you think there is a gap between academia and industry and what would be your recommendation for bridging that gap?

>> Gitte: In Canada, the gap is much smaller but in Australia it's like a canyon. The size of the gap depends on where you are in the world. I'd like to see us lobby government to incorporate connection between research and industry in grant tenders. But joint industry university contracts would have timescale mismatches. A critical thing is keeping up with our alumni.

>> Andreas: Australia has a very strong professional UX community. UX Australia normally achieves around 500-600 people every year. But it doesn't have any academics involved in it. Especially anyone from HCI.

>> Gitte: It's history repeating itself. It's exactly what CHI went through when UPA was established. Now in Australia we have UX Australia which is all the practitioners, and OZCHI which is all the academics.

Keith Instone: "Teaching UX & catching up on existing efforts"[26]

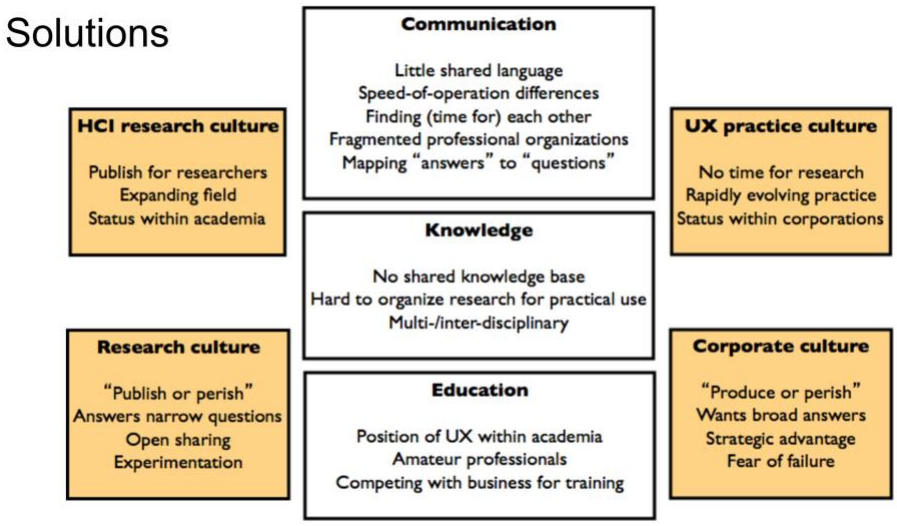
- A little bit of history about his and others' efforts in working on the HCI-UX topic.
- Introducing the idea of "UXRPI" – a name for the collective efforts of Keith, Elizabeth, Andreas and others in recent years. Keith breaks it down like this:
    - UX = means trying to take a practitioner point of view.
    - R = focus on academic research not user research
    - RP = researcher and practitioner, so about the people rather than the concepts
    - RPI = a homage to HCI – the "I" is about interaction and it's more solution-oriented
- UXRPI was a useful way to frame the conversations, and create a discussion in the first place.
- There were various SIGCHI activities in the past few years; stuff held at the CHI conference for instance. E.g., they conducted a CHI workshop in 2010 to look at the problem[27] and three or four Special Interest Group sessions at CHI.
- They formed a formal SIGCHI "community" but the SIGCHI communities support has not been great.
- With Andreas, Keith has been having a series of discussions at IA community events (for around 5 years) such as IA Summit pre-conference roundtables. It's been painful but useful.
- Regarding the whole HCI-UX topic, Keith argues that when Don Norman "starts preaching about it" maybe we are onto something.

>> Elizabeth: It looks like the IAI has been more successful than SIGCHI. We also did a workshop at UPA.

- Keith has written up the history here: http://instone.org/uxrpi-connectingdots
- They documented a landscape that highlights the differences and similarities between academic HCI and UX practice (shown in orange below), and some possible solutions (in different "layers"—shown in white below, image used with permission of Keith Instone):

[26] Keith's slides: https://docs.google.com/presentation/d/1kNtL-eQS6md0nDtS2IZN8KdO-80fJWdbjZAKBE6GEnQ/edit?usp=sharing

[27] Elizabeth Buie, Susan Dray, Keith Instone, Jhilmil Jain, Gitte Lindgaard, and Arnie Lund. 2010. How to bring HCI research and practice closer together. In *CHI '10 Extended Abstracts on Human Factors in Computing Systems* (CHI EA '10). ACM, New York, NY, USA, 3181-3184.



  - HCI research culture's publish or perish mentality is in tension with the corporate "produce or perish" problem.
  - A more solution-oriented discussion about how to close the gap would have to address these, although they are long-term issues to solve.
  - The solutions could be long-term, e.g., how you do education, more near term like knowledge-sharing and communication between communities.
- The current status of UXRPI efforts in terms of goals, results, things that are in-progress, and mistakes they have made in the past:
  - Goals: Mostly using existing venues to piggyback HCI-UX discussions – e.g., "While I am at the IA Summit with others interested in it". So it has been opportunistic thus far in terms of goals.
  - Results: Some valuable individual insights have been gained for the people present at these various events / activities on HCI-UX gaps, but they have not achieved anything scalable yet.
  - Things in progress: Keith is unaware of any formal programs that exist where there is money to be made explaining scientific research to practitioners (e.g., could be research funding etc.). There are individuals like Susan Weinschenk and Kath Straub, however.

>> Andreas: On scalability, making things scalable probably involves more than the effort of individuals. We are possibly managing to turn the roundtable at the IA Summit into a permanent feature of the conference. This might make it more scalable / formally organised.

>> Keith: Scaling would also involve making similar events "baked in" to every conference of note – such that they 'just happen' each year by default.

>> Elizabeth: What about interaction-design.org? Doesn't that attempt to provide bridging materials for practitioners written by academics?

>> Stuart: It's a great resource for PhD students – that's what it looks like. All the articles are very well written, but I can't imagine any practitioner using it.

- Keith is currently the Experience Architect in Residence at Michigan State University which has offered a way to help the faculty develop their curriculum (e.g., how should their IA class positioned alongside a methods class, etc.). It's in the digital humanities – College of Arts and Letters – and so it is a different way of thinking about where UX should be taught. It's not science based, computer science based or design based as a disciplinary home. Getting habits changed is hard and requires a shift in practitioner and academic cultures (e.g., the academics don't necessarily automatically think to invite Keith to academic events because they think he may not be interested).

- Keith is also teaching a class in applied cognitive science / human factors in BGSU.

>> Susan: How did the Experience Architect in Residence come about?

>> Keith: A prior student later became assistant Dean at Michigan State and I also knew some of the people in the university who used to be practitioners. So it was "who you know". I'm also trying to replicate this by keeping up with the alumni.

Rowanne Fleck: "What is the best education for UX researchers?"

- Spent 3 months at a UX agency in London part time. She interviewed everybody who worked at the agency. Towards the end of her time at the agency was helping out with various bits of user research etc.
- Provided some useful knowledge about what happens in the "real world", different terminology and different perspectives etc.
- This is a case study approach and the findings are not necessarily representative of UX agencies in general.
- The company had 14 employees / freelancers / partners.
- The company did more user research work and less design work. Some clients saw the agency specifically as offering user research services and *not* design work.
- The company's staff had backgrounds that spanned HCI Masters, computer science / software engineering, or some other educational background and then moved in to UX through being self-taught (e.g., via mentoring etc.).
- Rowanne asked (during interviews): employers what they were looking for in an employer, and what employees valued most about their education.
    - Employers' point of view. They want new staff to have a good understanding of methods but a more "practical" experience of using them. They wanted "generalists" and people with lots of "soft skills" (and non-degree specific): project management, communication, presentation skills. A desire to be good at talking to clients (although not really train-able at university level). Be willing to learn, and realistic expectations of the "real world" in terms of being happy to use cut-down methods etc.
    - Employees' point of view. They thought training was essential. Valued an overview of the whole area and how training fits into a wider landscape. When asked about what theories they "found useful" this included (surprisingly) things like "distributed cognition", "Fitts Law", "embodied extended design", "psychology". Group work, placements, general benefits of learning.

>> Susan: With Fitts Law, it's probably because people "remember that" – they don't necessarily know what it means but it's easy to tell people about.

>> Rowanne: This is perhaps getting at the idea that there is knowledge you acquire from an academic education that may be valuable when you are starting to work out how to design for people.

    - Speaking to "the psychologists" at this particular agency, i.e., employees with a psychology educational background, they tended to value academic education as a "way of thinking". Knowledge of the scientific method especially how to design an experiment (e.g., statistics knowledge) was important. Visual perception knowledge was useful. They also indicated a more general methodological scepticism, and more awareness of the limits of whatever methods / approaches they were applying. Realising that the research has limitations and trained them to look at "processes which drive behaviour".
    - So, having an understanding of how methods 'work' was very much considered to be useful.

>> Torkil: We all know there is a lot of science in visual perception – perhaps the only place in psychology that there is some "real science". Do people actually use visual perception?

>> Rowanne: Anecdotal evidence really based on the study.

>> Susan: There are things (principles) like colours to use, proximity, etc. that can influence design.

- Overall this study raises questions about what the best education might be. As academic institutions we need to be clear about what we want to be able to give. It's not necessarily about training "UX professionals" but perhaps it could be doing academic education that also does "gap filling".

>> Stuart: I get the sense that their knowledge of different methods just needs to be "good enough".

>> Rowanne: Education then becomes an issue – should you be teaching to use methods and practice to use them, or teaching how to approach learning new methods and their appropriate application?

>> Selena: When we commission out to agencies we always indicate we are happy to consider novel methods if there is a good justification for it. It doesn't mean we wouldn't consider purely academic methods. A lot of the agencies do sideline work where it is non-client specific but raises their profile. As a practitioner I thought that practitioners must be pragmatic, to make research work under industry conditions within the constraints of time and budget.

>> Stuart: There's always a hint with academics that there is a hint of methodological puritanism.

>> Andreas: The problem is there – "what is best" for an agency or consultancy is different from academia.

>> Sara: Martin was talking about the difference between chefs and cooks. The industrial design practitioners I looked at were not just applying methods – they were "chefs". They did not say to their clients "we apply this method". Rather they considered their expertise in terms of knowing how to tackle problems – what tools, what materialisations. It wasn't at all about applying methods. Sometimes HCI is concerned about coming up with more and more methods to apply but this seems out of step with practitioners.

>> Andreas: We should keep in mind Rowanne is talking about a UX research agency which is very different – they don't do design.

>> Marty: When we interviewed practitioners, we asked ourselves "could we identify the five methods and everybody uses" and then teach those in university – other than sketching.

>> Rowanne: Employers want people to come in job-ready and know all the methods, but also be flexible and a realistic understanding of method. Maybe employers need to understand that what they get in a graduate is not those things. A lot of this is learning on-the-job

>> Torkil: We are talking about UX professionals as though they are all young people – but they will get older and they will need the knowledge and skills we teach at university. UX might also be very different in different countries, e.g., government regulations etc. It would be very useful to get an integrated paper on studies of UX practitioners.

>> Marty: We need to have more of these kinds of interviews.

>> Susan: When we did consulting at the beginning, a lot of what we had to do was about just educating the client. Originally we were kind of like the 'honey bees' aiding communication in organisations between developers, designers, etc. We were trying to teach them how to think rather than what to think. But what has happened in practice – it to some extent 'dumbing down' where a consultant is not supposed to challenge the client but is simply an extra pair of hands and you "do what they say".

>> Simone: It's interesting to consider the different "flavours". The picture in this talk is quite typical of an agency, however if you look at UX practitioners client-side, i.e., embedded within companies, they actually look quite different.

>> Rowanne: The initial plan was to do multi-site visits at different places with different organisations to get a broader picture.

>> Selena: How did this placement come about?

>> Rowanne: It was a UCL knowledge exchange grant – to improve our HCI education.

>> Torkil: In KTH, Jan Gulliksen and co.[28], there were studies on usability professionals' work in companies. In my own work I found that in terms of theory, practitioners were interested in various theories like distributed cognition etc. But when you look at the people saying this, they are in research an development parts of a company or they used theory because it was part of a company's overall methodology. Apart from that theory was not very interesting to them. Some methods like usability testing are very commonly practiced and you can find variations in frequency depending on where you sample. I'm interested in what we can learn from doing these kinds of studies – I think we can learn about barriers and get indicators for what the problems are when you do usability work in companies.

>> Keith: A consultant could help enthuse an understanding of the value of academic research – a consultant could be a bridge.

>> Selena: I prefer Keith's division of scientific research and user research rather than the HCI-UX division.

>> Elizabeth: We could call it academic research because then it doesn't imply natural sciences.

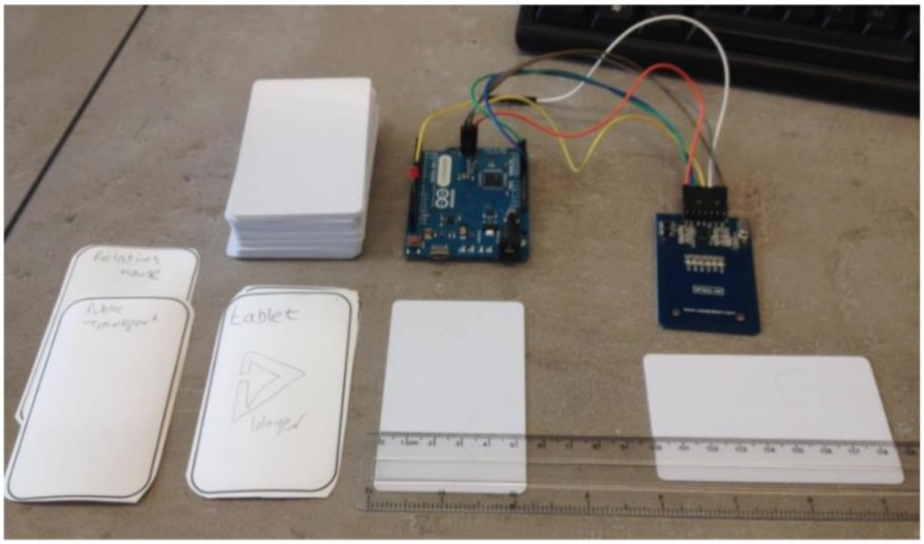
Raphael Velt: "Co-designing a prototype to bridge HCI theory and UX practice"

- Talk is about an attempt at knowledge transfer with the BBC. It's an ongoing process.
- Raphael was attempting to transfer the trajectories framework from Steve Benford et al. which is a 2009 CHI paper[29]. This was based on studies of work by arts group Blast Theory.
- Trajectories is a theory for thinking about complex interactive experiences that involve timescales, spaces, interfaces, roles, ecologies, that perhaps relate to 'cross-channel' user experiences.
- Trajectories introduces specific sets of terminologies for talking about these ideas such as participant trajectories, canonical trajectories, etc.
- Translations have been made from the academic work as it is presented (as a set of papers) to other forms such as a book, website, etc.
- The first step of the transfer process involved Steve Benford engaging with the BBC, doing workshops where trajectories would be introduced to people at the BBC, and where they could sketch them for possible design projects. This involved some translation work – trajectories becomes "journeys" and "pathways" as derived concepts.
- They were asked to try to apply trajectories to a concrete design project – the BBC wanted to do this in order to add some "academic rigour" (as they called it) to the projects.
- It was hard to decide which way to introduce trajectories into these situations. One way was to take what came out of the workshops (scenarios) and transform these into "commissioning templates" – these are "generic trajectories" that could be built into a particular instance. This never really was completed.

[28] See https://www.kth.se/en/csc/forskning/mid/people/gulliksen-jan-1.285655

[29] See https://stevebenford.wordpress.com/themes-and-key-papers/trajectories/

- At some point a tool was thought to be useful – and a trajectory-related tool was created involving RFID enabled cards so that trajectories could be constructed and then digitised easily (see images below, used with permission of Raphael Velt).



- Raphael recorded the tool's use in practice – to understand how the tool is used but also how the knowledge transfer actually worked. However:
    - It's been hard to find people to engage with this tool
    - It's been difficult to locate the right level of project, the right time, or that the tool is seen as potentially adding value.
    - A large organisation with silos causes this process problems as well.
    - Working around prospective users' schedules is also difficult.
- By concentrating on workshops, Raphael felt he had a distorted view of the design process. Although they may have looked at first glance as a location where the work ideating designs is being done, they may have more complex purposes, such as getting teams to know each other and reach agreement on requirements.
- By doing workshops the design process using trajectories is also made to look very simple. Other aspects of the design process, e.g. refining sketches, solitary work, were sidelined.

- Concepts from the trajectories framework have been simplified – in a way it goes against the idea of "take-aways" from academic work. With a complex framework like trajectories, you can't always provide a takeaway that neatly fits in the abstract.
- Trajectory concepts have also been assimilated into concepts that people are already familiar with such as user journeys.
- The BBC also had their own reasons to use the trajectories framework – they wanted to find a way to bridge between different BBC products. This means that the trajectories framework is positioned in this view as a remedial framework to 'fix' problems rather than being seen as a holistic design framework as it was intended.
- People in the BBC also wanted to use the framework to get leverage within the organisation – they wanted to be able to improve their standing with other parts of the organisation through validation of their design work with the trajectories framework.
- The trajectories framework was hard to put into practice because it raises questions and offers some answers, but not necessarily solutions. For instance, it might highlight gaps in user experience that just cannot be addressed through lack of resources or perhaps because one has to use existing tools within an organisation where new ones are required.
- There is a lot of uncertainty too – in trying to apply trajectories this meant that the designers had to assume many things about different partners who might be involved in the design (e.g., internal BBC departments).
- Trajectories does not offer metrics for project success – so other metrics are relied upon such as number of clicks etc.
- The net result was a tool that incorporates some trajectories concepts and can help with knowledge sharing in organisations but there are many parts of trajectories that are not represented in the tool.

>> Elizabeth: Practitioners mean different things when they say 'stakeholders'. I was wondering what you mean by it?

>> Raphael: I've not been able to find terms to describe the various people in the BBC who have different roles – for instance people we have met are not necessarily called designers even though they do design work. As a TV / Radio oriented organisation they are instead called 'producers'. So I'm struggling with the right thing to call them.

>> Elizabeth: Usually what we mean when we say 'stakeholders' as practitioners is people who are external to the team. In my experience 'stakeholders' are people who are "outside" of / external to the project.

>> Andreas: In the Information Systems traditions you can use 'stakeholders' as a global name for participants in a team.

Simone Stumpf: "Knowledge Transfer Projects: The story of Ahamo"

- Simone has spent time switching between industry and academia.
- She is describing knowledge transfer projects – in the UK, with a reduction in research council funding there is an increased drive to work with companies, with practitioners, to generate funding. Academics are assessed via REF as "impact stories", and working with industry gives you these.
- KTPs are increasingly attractive to universities as sources of funding. In these arrangements, universities hire a "knowledge transfer associate" who is embedded within the industry collaborator. The company gets access to all the knowledge of the university. It's not just conceived of as one-way, though; academics can see how what they have to offer might be put into practice and maybe transfer back to teaching etc.
- They are also involved in other academic-industrial partnerships e.g., consultancy, Catalysts, CR&D, Innovation Vouchers, etc.)

- Ahamo was a 2 year KTP conducted between City University and an industrial partner.
    - Ahamo was a project around developing a system to support professional and personal development in an enterprise / organisation.
    - They developed an online learning space where learners can record their thoughts whilst watching video materials.
    - The system analysed notes etc. in order to support content discovery for the users of the system.
- They conducted a competitor / market analysis during the project (a discovery phase) in order to shape the end product.
- The industrial partner specialised in developing video and animated content production for corporate clients, including training videos etc.
    - The partner provided an end-to-end service covering consultation, concept creation, scripting, storyboarding and production to final delivery of the video content.
    - The partner was small (around 15 staff).
    - These kinds of companies may not be funded by current KTP rules (50+ is the mimumum).
    - This is a shame because smaller companies are often more in need of support
- The City University team provided knowledge and expertise around:
    - Research on user interaction with media.
    - Expertise in the design and development of novel technologies including intelligent systems and information systems.
    - Digital library expertise, intelligent and expert systems expertise, etc. in the City University team.
    - Finally, they had the embedded knowledge transfer associate.
- The project did launch a product which has been trialled successfully.
- Project was rated “Outstanding” by Innovate UK although there is no cash prize associated with it!
- They transferred UX knowledge and skills to the company including ideas about involving ‘users’ from the start.
- Prototyping was done very early and they engaged with potential stakeholders very early in the design process.
- They built a continuing relationship with the company – so they are developing this actively.
- As an academic the lack of publications is problematic.
    - Simone couldn’t describe the product in a publication due to IP.
    - And in reporting on their methods for publication instead – they weren’t particularly novel – resulted in feedback from peer review that didn’t see any interest in them.
    - In the end the role for an academic can’t necessarily be “for the publications”.
    - Some of the issue is about how research work is classified in evaluation exercises and whether it’s visible to how research funders do their evaluations.
- They need more money to exploit and develop the product further – due to the size of the company they are struggling to work out how to get venture capital funding.
- They recruited from Iran in order to get their knowledge transfer associate. The salary here is capped – but the industry partner can contribute, although smaller companies would find this problematic – and you are competing for people in London where there is a large UX community who can get a better paid job elsewhere.
- There are some common themes Simone has discovered when working with other companies.

- As an academic you tend to end up using what you already know – so from a research perspective it is not necessarily satisfying. You struggle to publish your work.
- The benefits of industrial collaborations is not found in methods but rather in developing a new product.

>> ?? The “make it look good” problem – a complete misunderstanding about HCI or UX that they encounter each time they start work with companies. In this sense the “knowledge transfer” work has to start at a much lower level. Often seen as if the “magic of UX” is to be sprinkled over the solution.

- Especially for smaller companies, they have never heard of UX and suddenly they become aware of its importance.
- There is relatively small amounts of funding around for these kinds of projects – startups, charities and smaller companies are getting left out often.

>> Rowanne: Does the university have enterprise funding?

>> Simone: It’s very limited – there is not a large pot of cash.

>> Rowanne: Maybe funding for spinouts won’t work if you are already working with an external partner like a company.

>> Stuart: There is a major clash of values here. Universities value you doing great research – even if you have been involved in interesting collaborations you need to change it and make them value it.

>> Simone: Every university has a value structure which is based around publications – so doing all this stuff with companies is really nice and interesting but it doesn’t do my promotion prospects any good. There is this tension between what is important to advance in academia and be valued there and what is valued as part of a profession / business.

>> Sara: In Sweden we have similar knowledge transfer schemes – at the start people participating in the scheme would be worried about being embedded in a company / industry for a while and how that relates to their prospects back in the university life, but in the end it actually has different value when people return back to academia in terms of things like research questions and how you approach research.

>> Simone: The value I get out of collaborations (e.g., those via Catapults / Innovate UK) has primarily been with students – so job offers, internships, etc.

>> Sara: One project I did with the industrial design firm I was at was around accessibility – we built a service – but the project stopped, and there was no more funding. Instead my strategy has been to engage with our entrepreneurship school where students can own part of the project / business in collaboration if it succeeds. Have you looked into that way? Joint ownership etc.?

>> Simone: We have involved our business school to look at this, which was useful but only goes so far, because you need a dedicated person in the end who does this work.

Key outcomes of the symposium

Towards the end of the symposium we collectively brainstormed a range of possible future actions to take in order to sustain the group of people who had been brought together and push the topic forwards. We thought about these in terms of different timescales of possible actions, from 1 year ahead, 5 years ahead and 10 years ahead. Below are ideas collected together for each of these timescales. Many of the aims for these timescales overlap, of course.

1 Year Timescale

- Finding places for practitioners to be part of research e.g., regular invitations for academics to be involved in classroom etc.
- Making space on the HCI agenda for the HCI-UX topic to be talked about, perhaps via a manifesto or similar strong statement to the HCI community. Clearly identify the value proposition that academia can give to practitioners and vice versa.
    - E.g., use ToCHI as a way of making space, for instance via a special issue.
    - E.g., a manifesto / statement in ACM Interactions and relevant popular UX mag – perhaps stating the problems and some solutions.
- Engage in consortium building – in order to share connections and best practices.
    - Identify bridging people / gap-closers and key players, spokespeople
    - Look at network funding to support travel / meetings e.g., COST Action EU network funding €130,000 p.a.
- Develop a collaboration guide.
- Organise communication methods: mailing list etc.
- Arrange a future meeting.
- We collectively have a large network when we put our own connections together. We could exploit our own group as a distribution / engagement network.
- We should look to industry papers e.g., IBM, Google Research, Microsoft etc. for engagement.

5 Year Timescale

- Develop a more formal network or map of HCI/UX education. What can we target to increase practice exposure over that time?
- Engage in more formal (publishable) studies of design practice.
- Develop easier ways for practitioners to affect research topics.
- Find ways of enabling research “flash” or “highlights” that connect with a popular practitioner publication / web resource / social media presence. This would need to be integrated deeply with people running those community resources and get ‘buy in’.
- Consider something like practitioner take-aways for publications in conferences e.g., CHI papers. These would have to appear in a proper UX place and be curated, and also we would need to consider targeting and be more specific about the term ‘practitioner’ – which practitioners would we want to target?
- Further agenda setting and community sustaining work to be done within HCI community perhaps via further publication, SIGs, special issues, workshops, etc.
- Awards for papers that are the most relevant to practice.

10 Year Timescale

- What are 10 UX grand challenges?
- Curricular innovation: more opportunities for students to experience practice settings.
    - Design education: Make design students able to produce design out of research results.

- ACM syllabus for HCI, please also take a look at http://ifip-tc13.org/working-groups/working-group-13-1/

APPENDIX

Agenda

DAY 1 (mapping out the topic) - Thursday 19th Nov

09.00 - 09.30 Start Day 1: arrival
09.30 - 10:00 Introductions: agenda, housekeeping, why are we here and what are our goals?

Session: Perspectives on practice 1
10:15 - 11:15 Talks (15 mins each: 5-10 mins + time remaining for questions)
- Susan Dray: “The View from Here”
- Selena Whitehead: “UX Research at BBC Digital”
- Andreas Resmini: “Making the gap visible - the M3 model and the necessity of a common language”

11:15 - 11:30 Break / coffee
11:30 - 12:15 Talks (15 mins each: 5-10 mins + time remaining for questions)
- Elizabeth Buie: "UX practice: A few things academia may be missing by concentrating its research on the major players"
- Sara Ljungblad: “Beyond ICT: How industrial design could contribute to HCI”
- Torkil Clemmensen: “How do usability professionals construe usability and UX?”

12:15 - 12:30 Summing up / capturing what was discussed / anything missing?

12:30 - 14:00 Lunch

Session: Perspectives on practice 2
13:45 - 14:15 Talks
- Colin Gray: “Building a Multidimensional View of Professional Practice through Trace and In Situ Data Collection”
- Marty Siegel: “Many People Talking and Few Listening: Reflections from a Four-Year NSF Study on Design Methods”

14:15 - 15:30 Breakouts - history and role of HCI and UX ‘in the world’
15:30 - 16:00 Break / coffee
16:00 - 16:30 Talks (15 mins each: 5-10 mins + time remaining for questions)
- Stuart Reeves: “Formatting design problems in UX practitioner work”
- Carine Lallemand: “Conciliating scientific requirements and relevance to practice: why is it such a dilemma for the development of UX design and evaluation methods?”

16:30 - 17:00 Summing up / capturing what was discussed / anything missing?

17:30 End Day 1

DAY 2 (so what now?) - Friday 20th Nov

09:00 - 09:30 Start Day 2: arrival
09:30 - 09:45 Summary / recap of Day 1

Session: "So, what now?" Ways of dealing with the topic
09:45 - 10:30 Talks (15 mins each: 5-10 mins + time remaining for questions)

- Gitte Lindgaard: "Strategies for research -> practice" and "The academic situation in Australia and Canada"
- Rowanne Fleck: "What is the best education for UX researchers?"
- Keith Instone: Teaching UX & catching up on existing efforts (with help from Andreas Resmini and Elizabeth Buie?)

10:30 - 11:00 Break / coffee

11:00 - 11:30 Talks

- Raphael Velt: "Co-designing a prototype to bridge HCI theory and UX practice"
- Simone Stumpf: "Knowledge Transfer Projects: The story of Ahamo" (strategies / experiences)

11:30 - 12:00 Summing up / capturing what was discussed / anything missing?

12:00 - 13:30 Lunch

Breakout session 1: Intro and "the gap"
13.30 - 13:40 Intro to afternoon activities
13.40 - 14:10 Breakout session 1: The gap

- What *is* the gap? What is *not* the gap? From whose perspective?
- Analysing the map

14.10 - 14:40 Report back

14:40 - 15:40 Breakout session 2: Future actions (with refreshments)

- Community building e.g., ways of establishing a network and sharing resources
- Research agendas / research proposals
- Events
- Writing joint public manifestos for academics, for professionals
- Methods of communicating (and to whom)

15:40 Report back + closing

16:00ish End Day 2