



Reviewing The Big Questions Literature

Jordan Beck & Erik Stolterman

Context



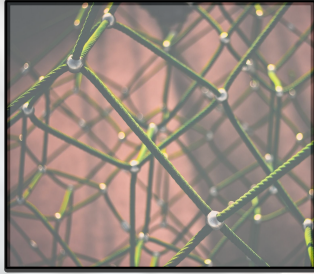
Context



discrete threads

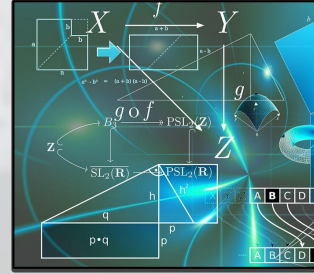
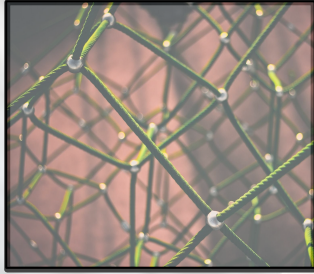


Context



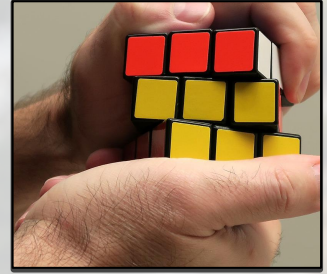
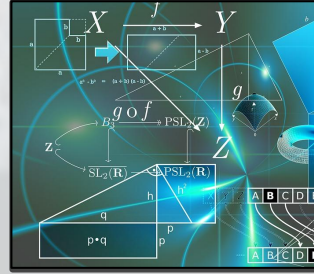
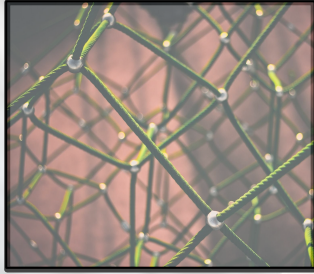
**divergent research
questions and approaches**

Context



HCI as a science (?)

Context



HCI as problem-solving (?)

Examining Big Questions

this is **not** a sales pitch for big questions

it is an examination of them in terms of...

A hand holding a magnifying glass over the word 'meaning'. The magnifying glass is positioned over the word, making it appear larger and more prominent. The hand is visible on the left side of the frame, holding the handle of the magnifying glass. The background is a light, neutral color.


meaning

purpose

Approach

search Google Scholar and Web of Science for “big questions”

collect papers that engage with big questions in a deeper way (n=71)

A stack of several white papers is shown, slightly offset to create a sense of depth. On top of the stack is a white rectangular box with a thin black border. Inside the box, the text 'Explanations + Descriptions of Big Questions' is written in a black, sans-serif font, arranged in four lines.

Explanations +
Descriptions
of
Big Questions



What are **big** questions?

resource-intensive

impactful

big questions are **resource-intensive**

“[big questions] require significant infrastructure, large experiments, networks of observations, and complex data and computation” (Schimel & Keller, 2015)



big questions are impactful

“[big questions] stimulate and guide future research and scholarship” (Briggs, Butterfield, & Zeilinger, 2013)

“[big questions draw attention to] some important issues likely to have an impact on the challenges the world faces in the 21st century” (Salbu, 2000)





a comprehensive description

“Questions... that are of interest and importance for a large number of people (over long periods of time)... are of such a nature that their answers have the potential for lasting impact... and subsume many other smaller questions.” (Donaldson, 2011)

how will big questions change things for the better?



FRAGMENTATION

STATUS

PROGRESS

Fragmentation and disunity

the text entry research community is “**scattered across** different fields[, which results in] many researchers being unaware of relevant progress” (Kristensson et al., 2013)

“[the] **surge of varied approaches** in interspecific mutualism has resulted in a **large and potentially confusing literature**” (Hoeksema & Bruna, 2000)

Low/no intellectual status

big questions can help biodiversity informatics move past “gee-whiz [activities]” and towards a “fundamental **science** infrastructure” (Peterson et al., 2010)

the act of discussing big questions has the capacity to “make **scientific** progress, and enhance the **status** and **prestige** of the field” (Peng, 2004)

Slow/no Progress

theory-building

supporting practitioners



Critiques

we found **one critique** and no efforts to assess whether big questions work

“[big questions **narrow**] the **possibilities** of an inherently creative discipline”

“... the biggest breakthroughs often come from unexpected directions” (Ball, 2006)

“... the most interesting things happen at the edges and boundaries...” (DIS 2017 home page)

A close-up photograph of a person's hands shaping a clay pot on a pottery wheel. The hands are covered in white clay, and the wheel is spinning, creating concentric circles in the clay. The background is blurred, showing a white cloth and a wooden surface.

could big questions be relevant to HCI research?

HCI as Fragmented

“... no longer a coherent set of aims...
[and] a worrying lack of direction, structure, and
purpose” (Rogers, 2012)

“HCI seems **to have no consensus** on what
we need to study” (Hornbaek et al., 2015)**

“... a remarkable **heterogeneity** of
methods, orientations, and approaches, which have
contributed to the rubric of sustainable HCI”
(DiSalvo, Sengers, & Brynjarsdóttir, 2010)

HCI as a low status community

“perhaps characteristics of all ‘new’ research communities, anxieties have been expressed over its **status** as an academic object” (Reeves, 2015)

Progress in HCI Research

“[There could be] a need for [sustainable HCI] to take stock of what is known and to identify major unknown questions or issues” otherwise its research is at risk of **“reinventing the wheel”** (Di Salvo, Sengers, & Brynjarsdóttir, 2010)

Tentative Conclusion

resonance between descriptions of HCI and other research communities...

What can HCI do with big questions?

generate questions based on different definitions

experiment with individual v. collective ways of generating questions

critique big questions and assess their effectiveness

the end