

# Reviewing The Big Questions Literature

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# Context



# Context



discrete threads

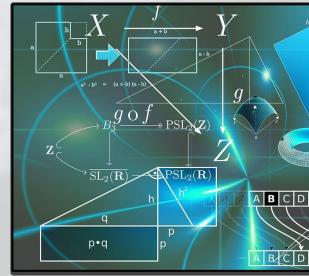
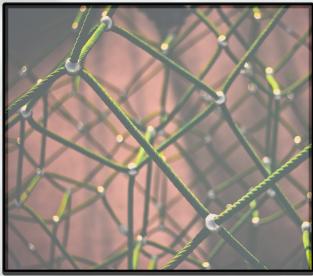


# Context



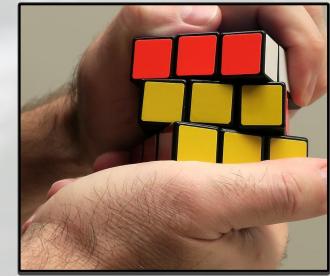
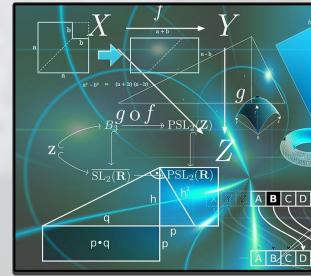
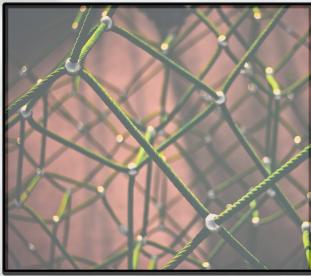
divergent research  
questions and approaches

# Context



HCI as a science (?)

# Context

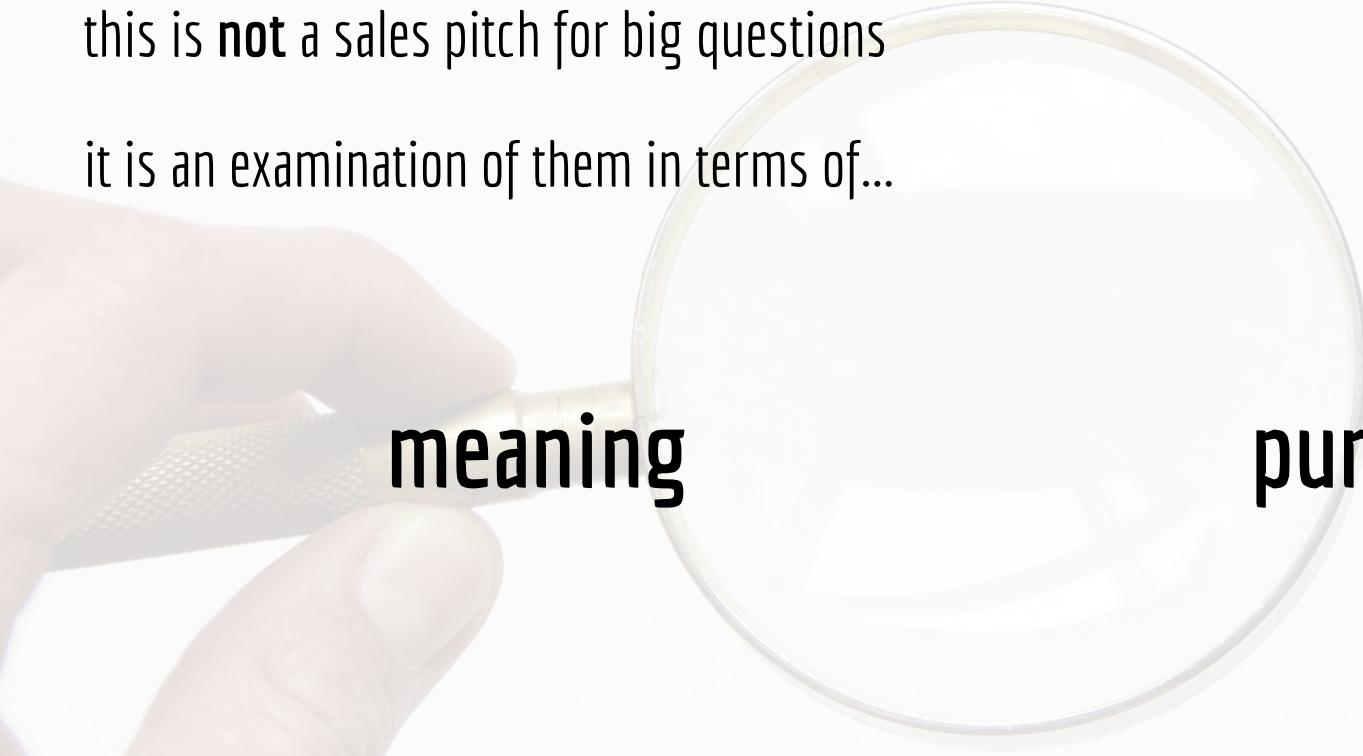


HCI as problem-solving (?)

# Examining Big Questions

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

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

A photograph of a person's hand holding a magnifying glass. The hand is positioned on the left, with the thumb and index finger gripping the handle. The magnifying glass is focused on two words: 'meaning' on the left and 'purpose' on the right. The background is a plain, light color.

meaning

purpose

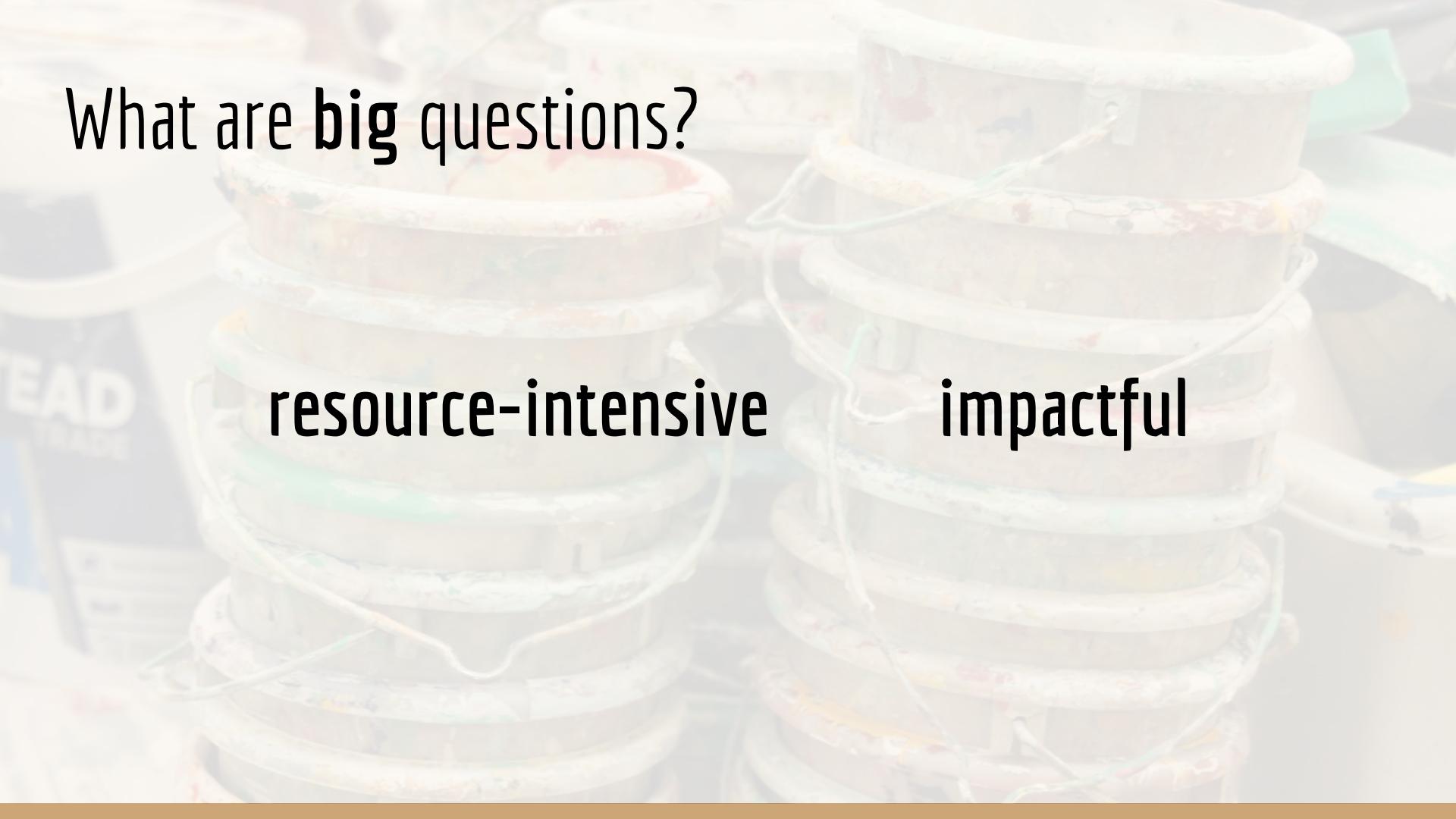
# Approach

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

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



Explanations +  
Descriptions  
of  
Big Questions

A stack of petri dishes containing bacterial cultures, with a small green flag visible in the background.

# 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

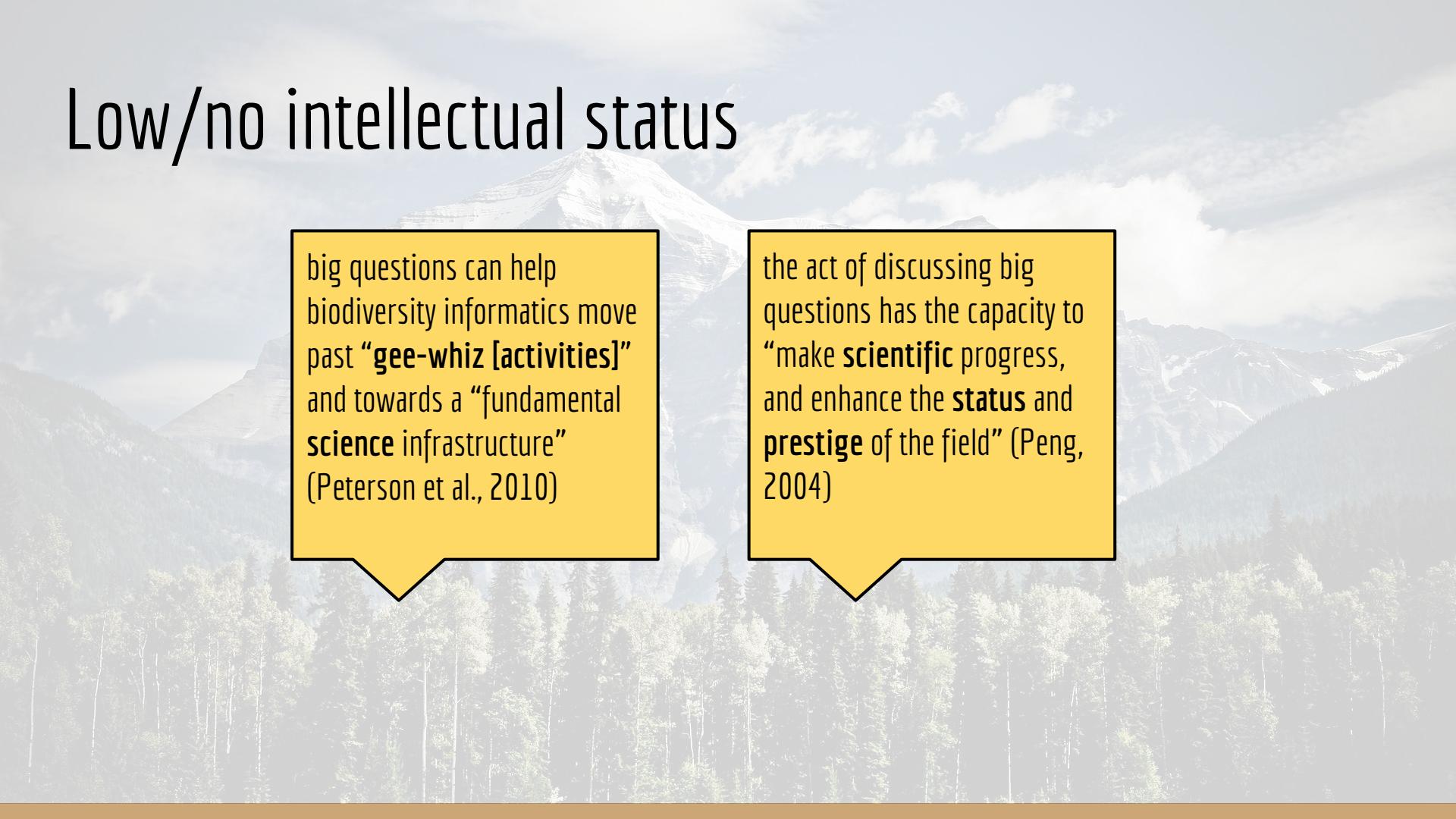
## PROGRESS

# 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)



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