How Do Future Visions Shape the Field of Human-Computer Interaction?

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ABSTRACT

Visions for the future of computing, such as those on Ubiquitous Computing or Tangible Interfaces, are highly cited and frequently used in teaching. Yet, we know little about the practical value of these visions for research on Human-Computer Interaction (HCI) or how HCI researchers engage with them individually and collectively. To address this gap, we conducted a survey with 172 HCI researchers. We identified key benefits and pitfalls as well as specific uses of visions by researchers. Researchers appreciate how visions guide us, drive us, and initiate new fields. Simultaneously, researchers acknowledge how visions create hype, restrict our creativity, and make us disregard real-world problems. Based on these insights, we derive tensions related to the pursuit of visions and discuss critical reading practices. Our paper offers a metascientific account of visions in the HCI field along with tools for critical reflection when engaging with them.

CCS CONCEPTS

• **Human-centered computing → Human computer interaction (HCI)**; *Empirical studies in HCI*; *Interaction design theory, concepts and paradigms.*

KEYWORDS

visions, envisioning, human-computer interaction

ACM Reference Format:
Jens Emil Grønbæk, Clemens Nylandsted Klokmose, and Kasper Hornbæk. 2026. How Do Future Visions Shape the Field of Human-Computer Interaction?. In *Proceedings of the 2026 CHI Conference on Human Factors in Computing Systems (CHI '26), April 13–17, 2026, Barcelona, Spain.* ACM, New York, NY, USA, 18 pages. https://doi.org/10.1145/3772318.3791038

1 INTRODUCTION

> *A map of the world that does not include Utopia is not worth even glancing at, for it leaves out the one country at which Humanity is always landing. And when Humanity lands there, it looks out, and, seeing a better country, sets sail. Progress is the realisation of Utopias* — Oscar Wilde

Human-Computer Interaction (HCI) is a future-oriented discipline. It studies how people experience computers and seeks to design interactions that go beyond the state-of-the-art. Beyond scientific evidence of a problem, HCI research is often driven by a *vision* to shape a more desirable future of computing, much like Wilde's "Utopia": A place we may never fully reach, yet one that continually propels us forward.

Papers with visions of the future (some of which are decades old) have reimagined the role of computing in their time and continue to influence research today. This is seen in the large citation counts of classic texts (such as Bush's *As We May Think* [13] and Weiser's *The Computer for the 21st Century* [76]) and how they today appear in the titles of syllabi (e.g., Ubiquitous Computing university courses) and textbooks (e.g., [28, 43, 65]).

Despite the significant presence of visions in HCI and a few discussions of their nature and influence on the field (e.g., [21, 59, 64]), we know little about what HCI researchers generally regard as the visionary works of our field, what their practical value is, and in what ways researchers engage with them, individually as well as collectively. Therefore, we conducted a survey to ask HCI researchers about their attitude towards and engagement with visions. For framing, we introduce a simple distinction (V/v) to convey our focus on field-shaping *Visions* (uppercase V) as opposed to the type of visions used in designerly practice (lowercase v).

The main contribution of this paper is a survey giving a metascientific account of how HCI researchers understand the impact of visions and how they engage with them. First, we use our data to unpack what is regarded as a vision. We present a list of the most prominent visions in HCI mentioned by respondents and examine their proposals and uncertainties regarding what a vision is. Second, we establish why visions are important and how they influence researchers. We report researchers' attitudes toward the impact of visions on the field of HCI, showing how they rate their importance in general. Moreover, we identify six benefits and five pitfalls of working with visions, derived from the survey responses. Finally, we examine how researchers operationalize visions. We present results showing that visions are personally meaningful to researchers, exemplifying their specific uses of visions and extracting characteristics of researchers' personal visions.

Based on the survey results, we discuss implications for HCI. Our main takeaway is to call for a more deliberate and systematic use of visions. In HCI, we cite and formulate theories to negotiate and accumulate scientific knowledge on computing. In the same spirit, we could be more systematic in how we cite and formulate visions to critically debate the values and influences that drive us to imagine a desirable future of computing.

CHI '26, April 13–17, 2026, Barcelona, Spain

2 BACKGROUND: WHAT WE KNOW ABOUT VISIONS IN HCI

In this section, we examine what is known about visions and how they shape HCI.

2.1 Visions are Claimed to be Important to the Field of HCI

At its core, the HCI field is always simultaneously engaged with the past, present, and future of computing. A driving force in the future-oriented research is to formulate and build on each others' visions for what computing should become in the future of our society.

Many of the well-established visions for computing can be traced back to specific sources, such as academic publications, recorded talks, or video demonstrations of interactive prototypes. Highly cited sources include the classic visionary papers of Bush [13] and Weiser [76], popular science talks such as the TED talk on SixthSense technology, and the live demonstration of interactive technology by Douglas Engelbart best known as "The Mother of All Demos" [1].

These classic visions are highly cited and often referenced in the HCI field. In textbooks, the classic visions have been highlighted as sources of inspiration and guidance [75] and as foundations of new fields [65, 73]. They are visions that, beyond simply imagining the next generation of computers, also establish what Jasanoff and Kim would call sociotechnical imaginaries: *"collectively held, institutionally stabilized, and publicly performed visions of desirable futures, animated by shared understandings of forms of social life and social order attainable through, and supportive of, advances in science and technology"* [39]. The introduction to the 2003 New Media Reader book [75] states "*The articles by Licklider, Sutherland, Nelson, and Engelbart from the 1960s included in the reader are the essential documents of our time; one day historians of culture will rate them on the same scale of importance as texts by Marx, Freud, and Saussure.*" Similarly, the impact of the Ubiquitous Computing vision is crucial, with Mark Weiser's popular vision paper "The Computer for the 21st Century" [76] amassing more than 20,000 citations (at the time of writing this paper). The importance of Weiser's ideas and his character is described in a 2023 biography [73]. It provides a peek into the aftermath of the release of his vision paper, where significant hype surrounded the core ideas and prototypes demonstrated in Xerox PARC. In the years that followed, the ideas of Ubiquitous Computing are also traceable in prominent vision papers, such as in Tangible Bits [37], and in the titles of entire textbooks (e.g., [28, 43, 65]), course syllabi, and conferences e.g., Ubicomp and TEI).

In addition to academic sources, popular science fiction has had a significant impact on the discourse on research and innovation [22, 42, 63]. Russell and Yarosh [63] provide the example "Amit Singhal at Google is well known for reminding us that the Star Trek voice-driven computer inspired their work on voice-recognition, spoken actions, and question-answering support."

Ishii et al. [36] claim that the endurance of visionary work, such as the above, can be attested to its timelessness. Today's technologies may become obsolete within a year, and today's applications might be replaced in a decade. But true visions—that meaningfully shape how we think, design, and intervene—can last generations.

[1]"The Mother of All Demos" https://dougengelbart.org/content/view/209/

2.2 Lowercase and Uppercase Visions of HCI

To delimit the sense in which we discuss visions in this paper, we make a distinction between visions used in used in everyday HCI design practice and weiserian-scope visions.

As a design-oriented discipline, the use of visions lies at the heart of designerly practice in HCI. Over decades, the design community in HCI has refined the role of envisionment in design. In the early days, a seminal HCI project, UTOPIA, developed participatory design methodologies for envisioning alternative futures of the role of computers in work practices [71]. Since then, the field has progressed from Rosson and Carrol's scenario-based design methodology [62], to Pierce's speculative design [55], and onward to Blythe and Encinas' research fictions and thought experiments in design [12]. Methods for constructing, using and interrogating visions in design have been developed through, for instance, Dunne and Raby's speculative design methodology [23], Bleecker's use of science fiction in design [11], or the critical lens on visions by Noortman et al. [52] who propose the concept of *ustopias* (inspired by Margaret Atwood); possible futures embodying simultaneously utopian and dystopian potentials. Löwgren and Stolterman's notion of *thoughtful interaction design* emphasizes movement between abstract visions and concrete specifications [46], with focus remaining on the individual designer rather than community-level visions.

However, to distinguish the designerly views (such as in speculative design) from that which captures the work of Weiser, we introduce the distinction between *visions* (lowercase v) and *Visions* (uppercase V). Lowercase visions refer to the situated visions used within a design process, which neither aim nor claim to shape a broader field or movement. Uppercase Visions go beyond the particular to shape a career, a community, or a whole field. This should not be understood as a categorical dichotomy, but rather a spectrum where lowercase visions can become uppercase Visions over time, or the uppercase Visions can shape the development of a lowercase vision in a design project.

In this paper, it is the role of the uppercase Visions that we seek to understand better. For legibility, we will for the remainder of the paper write *visions* as referring to uppercase Visions unless we explicitly refer to them as lowercase.

2.3 Critiques of Visions in HCI

A growing body of work has examined and critiqued visions and how they are pursued in HCI. Rather than treating them simply as predictions or blueprints, HCI scholars have shown how they operate rhetorically, culturally, and politically.

Reeves [59] argues that envisioning underlies much HCI research, often implicitly framing discourse. He calls for making this activity explicit, encouraging us to attend to the contexts and audiences of visions. By comparing Ubiquitous Computing and Virtual Reality, Reeves shows how contrasting visions can nevertheless rely on similar rhetorical strategies, warning that such visions may encourage technological determinism and limit critical reflection. Sanchez et al. [64] extends this critique, based on a literature review of futures studies in HCI. They propose the SPIN framework, with

four categories of how visioning manifests (epistemic stance, contingency perceptions, systemic integration, and narrative), aiming to support HCI researchers in more reflective *futuring*. Their work further provides a vocabulary for distinguishing different types of visioning, such as normative vs. explorative vs. predictive.

Perhaps the most influential vision in HCI is Ubiquitous Computing, introduced by Weiser's "The Computer for the Twenty-First Century" [76]. The classic text has been widely cited and driven the discourse of a large subfield within HCI. Dourish and Bell [22] juxtapose Ubicomp with science fiction depictions, while Rogers critiques its "calm computing" interpretation for discouraging user engagement and viewing users as resourceful [61]. Bell and Dourish [7] further highlight the tension between Ubicomp's promised future and present-day realities, noting how the field continually anticipates what comes next while neglecting the here and now. Russell and Yarosh [63] discuss the role of science fiction in HCI and caution against uncritical borrowing, proposing heuristics for design fiction that foreground plausibility and pragmatism. Like Bell and Dourish, they argue against overly distant futures that risk becoming perpetually postponed.

Taken together, these works claim that visions can inspire, guide, and constrain HCI research. However, they tell us little about the ways in which researchers in the field *actually* engage with visions in their everyday research practice.

2.4 Using Surveys to Get Insights into Researcher Attitudes

While there are critiques of visions in HCI, it remains unclear how HCI researchers work with visions in their research, both individually and collectively, and what they perceive the benefits and pitfalls of engaging with visions to be.

Addressing such questions concerns the metascience of HCI, that is, how researchers in the field more generally use and engage with visions. These can be investigated in many ways. However, surveys with researchers as respondents have proven useful for other metascientific questions in HCI [e.g., 16, 38, 50, 54, 58, 74]. For instance, Wacharamanotham et al. [74] surveyed two years of CHI authors if and how they shared materials and data from their papers. The study revealed important data about the perceived benefits of sharing materials and data, as well as the barriers that need to be addressed.

Although survey studies of researchers have many limitations with respect to the accuracy of self-reporting, they seem a promising way to get insights into how HCI researchers use and engage with visions. In particular, such a survey could give us insight into researchers' attitudes towards visions, which ones they regard as important, their concerns about relying on them, and how they specifically use them.

3 SURVEY METHODOLOGY

To gain insight into the role of visions in the field of HCI, we emailed all authors of full papers published at CHI 2025 to participate in an online survey. The survey asked them about their attitudes toward visions (in the uppercase sense discussed in Section 2.2) in general and toward specific visions that have influenced their work. The aim was to be able to conclude about the roles of those visions in their work, drawing on both closed- and open-ended questions.

For the survey, we provided a working definition of visions:

> We understand visions as, e.g., publications, recorded talks, or demonstrations, that are appreciated for describing a radically different role of computers in future work or leisure. [...] These visions typically describe both technologies and their use. Classic examples include Vannevar Bush's *As We May Think* and *Memex*, Douglas Engelbart's *Augmenting the Human Intellect* and the *Mother of All Demos*, Alan Kay and Adele Goldberg's *Dynabook*, Mary Lou Jepsen and Nicolas Negroponte's *One Laptop Per Child*, Hiroshi Ishii's *Tangible Bits*, and Cynthia Breazeal's *Social Robotics*, Pattie Maes' and Pranav Mistry's TED talks on *SixthSense technology*. Visions may also be more general, such as in terms like Natural User Interfaces, Human-Computer Integration, Ubiquitous Computing, Hypertext, Metaverse.

The intention with this definition was to give respondents a relatively open description of visions in HCI as a point of departure for more detailed questions about the respondents' attitudes toward visions. The definition primarily concerns what we in this paper call uppercase Visions, although the distinction was not introduced to respondents.

The study followed local ethical standards and complied with GDPR requirements for informed consent, lawful processing, and secure data management.

3.1 Questions about Visions

The survey aimed to collect data about three primary themes, namely respondents' views on *importance* (what the important visions are and how much they influence the field), *influence* (the practical value and negative impacts of visions), and *practices* (how they engage with visions in their own work—the classics as well as their personal visions). The full survey is included in Appendix A, and the wording of selected questions is also interspersed with the results. These three themes were informed by Related Work and three pilot interviews with HCI researchers.

For *importance*, we asked Likert scale questions about the impact and for them to describe up to three visions that had played a role in the respondents' work, in particular about the content of the visions and how respondents used them.

For *influence*, we asked for free-text responses about the reasons why visions are important and the possibly negative impacts visions may have. We included questions about visions that were phrased in a positive manner (e.g., Q7—Visions play an important role in HCI research) and a negative manner (e.g., Q8—Visions can negatively impact the HCI field) to probe respondents for nuances in their use of visions.

Finally, for *practices*, we asked about the respondents' use of visions, for instance, in teaching, funding proposals, and research managmenet (and five other uses that in part came up in pilot interviews). This was followed by questions on whether respondents had a personal vision and what role it played. This part of the survey was presented to respondents only after they indicated that visions

Table 1: Research topics across respondents. We found 100 unique topics of which those with a frequency of respondents at 3 or above is shown (N = 172).

Topic	n	Topic	n
Human-Centered AI	25	Critical computing	6
VR	20	Education	5
AR	17	Ubicomp	5
AI	15	Participatory design	5
Infovis	15	Tangible computing	4
Design	15	Games	4
Robots	10	Privacy	4
Health	10	Affective computing	3
Collaboration	9	Haptics	3
Usable security	8	Interaction techniques	3
Accessibility	8	Wearables	3
XR	7	Computer vision	3
Creativity	7	Sustainability	3

play a role in their research (in Q9). We then asked positively about the use of visions (Q10 through Q17), trying to increase reliability by using similarly worded questions [81].

3.2 Respondents

Respondents were recruited by sending an email invitation to all 4974 unique authors of full papers from CHI 2025. We sent an initial invitation via email followed by one reminder. In total, 328 respondents initiated and 172 respondents completed the survey with intelligible answers, resulting in a final response rate of 3.5% (see Section 3.4 for the screening process). Our recruitment strategy followed a similar process to recent metascientific studies (e.g., [8, 38, 74]). While it is effective, it also comes with its limitations, which we discuss in Section 7.5.

Figure 1 shows the respondents' overall experience and geographical location; Table 1 shows their research interests.

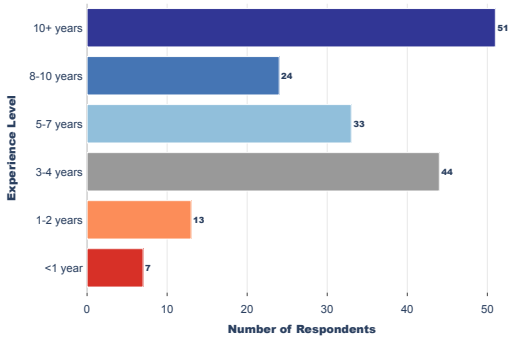
3.3 Procedure

After giving informed consent and being informed about data handling (in compliance with GDPR and institutional guidelines), respondents provided demographic and professional background information, including education, highest degree, research focus, and typical publication venues. We then presented the survey definition of "vision" (see above) before moving to the four sets of questions. The instrument comprised up to 49 items in total (some optional or conditional). Questions included Likert-type scales, multiple-choice checkboxes, and free-text responses. We designed the survey to take 20-40 minutes on average to complete.

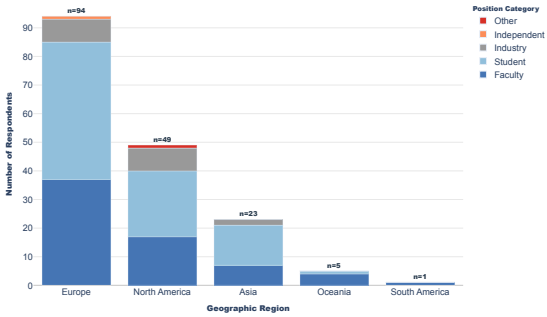
As compensation for participating, respondents were free to enter a raffle for five gift cards valued at $100.

3.4 Analysis

For the survey, we screened the full-text responses to verify that they were fully answered in an intelligible way; of the 328 initial answers, 156 responses were excluded in that way. For the remaining 172 answers, we report descriptive statistics for numerical answers.



(a) Years of experience in HCI research.



(b) Geographical locations with distribution of position.

Figure 1: Overview of respondents' experience and geographical locations (N = 172), showing an overall high level of seniority and a bias toward the European population of CHI authors.

For open-ended answers, we used affinity diagramming [47]. This process was done separately for each question. The diagramming was performed collaboratively among all authors using the software Miro. The analysis started with a synchronous session in which a subset of at least a fifth of the responses was analyzed. Each answer was represented as a separate note and read and discussed one at a time. It was placed next to similar answers; over time, clusters of similar notes appeared, which was considered a category. If a note contained more points, it was cloned and each point coded separately. After the synchronous part of the coding, the authors continued to code asynchronously, each checking the categories and leaving notes for the next coder, as needed. When one author condensed the codes into a final set of broader themes; these themes and codes were again checked by the other authors.

The number of responses varied from 47 to 172, depending on the question; the number of codes varied from 12 to 46; and the number of themes was around three to six per question. Some codes were excluded as they did not fit the thematic framing of benefits and pitfalls, and some responses were duplicated to fit multiple codes. Therefore, the percentages in Tables 3 and 4 do not add up to 100.

In the remaining sections of the paper, we report and discuss our survey results regarding what visions in HCI are (Section 4), how they impact the field (Section 5), and how researchers use them (Section 6).

4 WHAT CONSTITUTES A VISION OF HCI?

Although we have offered a working definition of visions to frame this paper (Section 3), the results of our survey offer important data to nuance what HCI researchers consider a vision for the future of computing. First, we report on our results from collecting vision examples from our sample (4.1). Then we describe respondents' perspective on the challenge of articulating what a vision is (4.2).

4.1 What Do HCI Researchers Regard as Visions?

We asked respondents to list visions that have influenced their work, along with references to specific sources. We coded every response to derive Table 2, listing the visions that were most frequently mentioned by respondents.

Most of the visions come from a single or a few souces, whereas others do not have a single identifiable source. Ubiquitous Computing (Ubicomp) is most frequently mentiond (12% of responses), followed by Tangible Interfaces (mentioned in 7% of responses). Both have distinct vision sources (i.e., Weiser [76] and Ishii et al. [37]). Several visions refer to a single specific source, including the concept of the Memex (containing the original idea which lead to hyperlinks) about which P117 says: "[...] there is a video, there is a paper, there are a zillion people rehashing it all the time". Other rows in Table 2 have less consensus on the vision, such as Extended Reality, comprising research on Augmented Reality (AR), Mixed Reality (MR), and Virtual Reality (VR).

Note that four respondents independently mentioned different dystopian visions that serve as "anti-visions" to drive their research, so as to to frame what they work *against*, rather than what they work *towards*.

Finally, there is a long tail of visions (orange row in Table 2) that were single or rare occurences, showing that the collection of visions that inspire is large and diverse.

Looking across the sources of visions (Table 2, rightmost column), we see a variety of source types that expand the ones in our working definition that primed the survey respondents. While most sources are research papers or popular science articles, there are also a large number of books and some video demonstrations. Sometimes a vision is merely a concept (such as Cyberpunk or Transhumanism), and many sci-fi references (such as Snow Crash) were mentioned. Finally, there are some rows of Table 2 that overlap (e.g., the new wave of "human-centered AI" is grounded in the same arguments and references as those of "human augmentation").

4.2 Lacking Criteria for What Makes a Vision

We deliberately kept the working definition of visions open for interpretation. The responses with examples of previous visions did not show a strong consensus on what a vision is. Moreover, the call for clearer criteria for visions was a consistent theme in responses to our survey question: *If you have any meta-comments about the survey, e.g., problems you see with our line of questioning, or comments on the suggested framing of visions, please let us know below.* Some were indicating uncertainty about what delimits a vision (P210: "[...] maybe also a counter-example of what is *not* a vision would have been helpful for my understanding of the questions."), others gave their rationale (P75: "I hope I understood what a 'vision' is. I assumed it can be something radical that also has some technical proof-of-concept or a demo system that solves a critical problem to suggest the vision is possible"). Others voiced that they had a different interpretation than our working definition, including P61: "I feel the focus is more on visions as events or artifacts, while I connected far stronger with them as intangibles.", and P133: "I think I may have another idea of what a vision is - less technology-focused, perhaps? And more in the line of 'doing something for the greater good' - as fluffy as that is".

These perspectives complement those covered in the literature. In sections 2 and 7, we discuss the perspectives in the existing literature, aiming to improve clarity on this matter by covering HCI vision frameworks and proposing a spectrum between lower- and uppercase visions.

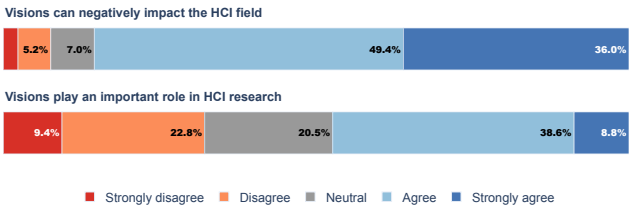


Figure 2: Impact on the field: respondents' ratings of the positive impact vs. the negative impact of visions on the HCI field

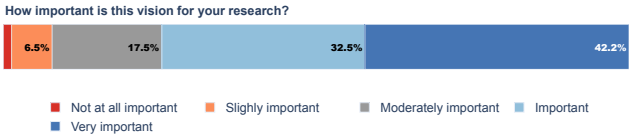


Figure 3: Impact on their own research: The aggregated rating across all mentioned examples of visions, showing how individual researchers perceive the impact of these example visions on their own research discource.

5 VISIONS AT WORK: IMPACT, BENEFITS AND PITFALLS

We now examine the survey responses to the two prompts *Visions are important to the HCI field* and *Visions can negatively impact the HCI field*, respectively. First, we report on respondents' attitudes toward the general impact of visions on HCI, dividing them into arguments for (5.1) vs. against (5.2) visions playing a significant role in HCI research. Second, we go in depth, based on our coding, to identify a set of benefits (5.3) and pitfalls (5.4) of visions.

Vision	Percentage (%)	Source(s)
Ubiquitous Computing	12.4	Weiser '91 [76], Weiser '93 [77], other unspecified Weiser papers
Tangible User Interfaces	6.5	Tangible Bits [37], Radical Atoms [35], Digital Desk [79]
Extended Reality	5.2	A Taxonomy of Mixed Reality Visual Displays [48], Ubiquitous Computing (see above), Wearable Computing as Mediated Reality (e.g., [70]), The Ultimate Display [72], The Ethics of Realism in Virtual and Augmented Reality [69], Hybrid User Interfaces [26], Metaverse references (Snow Crash by Neil Stephenson, Ready Player One (the book/movie), Meta and other companies)
Accessibility	5.2	The eyes have it [66], The concept of Cripistemology, Vizwiz [10], Interactive Storytelling [17], Universal Usability [67], Ability-Based Design [80]
Human augmentation	5.2	Engelbart: The Mother of all Demos, Augmenting human intellect [25], Man-Computer Symbiosis [44], The world through the computer [60], Next Steps for Human-Computer Integration [51], Human augmentation: Past, present and future [56], Augmented Humans conference, Shneiderman's Human-Centered AI [68]
Usable security	3.9	Users are not the enemy [1], Why information security is hard [4], So long and no thanks for externalities [30], Graphical passwords [9], Against security [49], Cybersecurity is not very important [53]
Posthuman	3.9	Transhumanism (no single source, but a general philosophy), A Cyborg Manifesto [29], Natural-Born Cyborgs [15] More-then-Human Design [3, 45], Posthuman care technologies (unspecified source)
Human-robot interaction	3.3	The design of implicit interactions [40], Asimov's work (Robot Visions, Three Laws of Robotics), Rodney Brooks' work from the 1990s, The Robot in the Garden [27], Affective Grounding in Human-Robot Interaction [41]
Feminist HCI	3.3	A Cyborg Manifesto (same as above), Feminist HCI [5, 6], The Will To Change [32], Gender Trouble [14], Data Feminism [18]
Somaesthetics	3.3	Somaesthetic appreciation design [34], Designing with the body [33]
Human-Centered AI	3.3	Engelbart's work and Shneiderman's Human-Centered AI (same as above), What if your boss was an algorithm? [2]
Dystopian visions ("anti-visions")	2.6	Cyberpunk (no specific source), Surveillance Capitalism by Shosana Zuboff [82], XR visions as portrayed in the TV show Black Mirror, Publications at alt.chi (sources unspecified)
Memex	2.6	Vannevar Bush's As We May Think from 1945 [13]
Embodied interaction	2.6	Dourish's Where the Action Is [20], other Dourish papers (unspecified), Somaesthetics (same as above)
Infrequently mentioned (< 3)	34.0	Beyond Being There [31], The Office of the Future [57]

Table 2: Visions in HCI. The percentage describes the number of occurences out of the 153 mentions of visions; not all respondents exemplified visions. Gray rows refer to visions that have specific, unifying, clear sources. White rows refer to those with a wider spread of vision. Red rows are for "anti-visions" that are deliberately dystopian to motivate working against them. Orange rows indicate visions with fewer than 3 occurences.

5.1 The Significant Impact of Visions

According to most respondents, visions play a significant role in their research. In response to the statement *Visions play an important role in HCI research*, 85% of respondents agreed or strongly agreed (Figure 2). We also asked them to list the visions that had influenced their work and rate their importance. As shown in Figure 3, of the aggregated list of 154 visions (some listed up to three), 75% were rated as important or very important for the respondents' own research. This shows that visions are not only central to the field, but also to respondents' research.

5.2 Arguments Against the Significant Impact of Visions

A small but significant sample of the respondents—10% (17) of the respondents—agreed to the statement *Visions have played NO role in my research.* Amongst the 14 legible responses (3/17 was difficult for us to understand and left out), seven of them were fromfaculty and seven from PhD students.

In their responses, three expressed unawareness of prior HCI visions. P186, for example, wrote "I don't know any of the mentioned visions" (faculty) and P205 who states "My research was driven by my own concerns and vision, not shaped by prior well-known HCI visions" (PhD student). P239 (faculty) found visions problematic:

> "My work focuses on how inequality is built into the everyday practices of tech [...] Visions of the future

> often smooth over these differences, treating people as interchangeable users or imagining a universal experience that doesn't exist. [...]".

A final group of four respondents provides the most direct arguments against visions having a significant impact on them. Acknowledging their awareness of prior visions, they do not find any of them to directly influence their research. P33 acknowledges there must be indirect influence, but cannot pinpoint any direct influence on their research direction. P16 says that AI companies' visions have had influence, not research papers. P209 claims (with metaverse as the example) that visions "operate at such a macro level that, in practice, I struggle to find any concrete use for it–beyond invoking well-known and big words in presenting my research."

Finally, P196 (faculty) sees some value without feeling influenced by the visions:

> "I think the boundaries between "vision" and "concept/theory" is not super clear to me. I don't think any visions such as the examples listed earlier have really affected my actual research. They have helped me relate to my community and colleagues, but are not something I have pursued in my work"

5.3 Benefits of Visions

Next, lets us explore the benefits of visions. They are derived from open-ended responses to the questions: *Visions are important to HCI. Why/why not?* We identified six distinct benefits of visions that provide utility to individual HCI researchers and the field as a whole. The benefits are summarized in Table 3.

5.3.1 **1** *Visions guide us.* The most strongly supported recurring theme (26.2% of responses) was that visions help guide HCI researchers. As P9 puts it, "Our HCI research needs a direction". Others emphasize this directionality with phrases such as "forward-thinking exploration" (P266), to "shape an idea of the future and drive innovation" (P80), or in P56's emphasis on focus:

> "Visions provide a goal, a direction to paddle in the near endless space of possibility. Especially widely shared visions serve as vetted goals which motivate many, serving to filter and focus efforts and attention where they can best serve."

Other interesting perspectives include P197, who emphasizes that we are guided by values: "And seeing translating them into values may shape a shared understanding of good/valuable research", or P274, suggesting they predict value: "Sometimes a good vision will predict the trend for the next few years (or even decades) in a field."

5.3.2 **2** *Visions initiate and structure paradigms.* While visions guide individual researchers on specific pursuits of work, they also mobilize entire fields (noted in 25% of all responses); initiating new subfields of HCI and attracting new people to pursuing agendas within these subfields.

As P111 states: "They allow for forward-thinking, totally unproven ideas to be articulated, which then allows us to interrogate and explore them more productively". Similarly, P55 claims that visions have most impact "at the beginning of the field, they don't seem to play an important role now as research has become more specialised (and even siloed)." Moreover, respondents raise how visions "provide structure to the field" (P65), "become a shared terminology" (P197), and "bring a community together around a share[d] concept/idea" functioning "as glue" (P189). P213 suggests that visions can structure future research at different levels, which reflects our distinction between upper- and lowercase visions (defined in Section 2.2):

> "While visions that are more general in nature help guide [HCI] contributions with respect to overall human-centered aspects and requirements, visions that are more specific with respect to the individual paths, goals, or even interaction possibilities they propose help with more concrete design and methodological choices."

Finally, classic vision texts also mark paradigms in HCI, important for understanding our field's history. P44 states:

> "visions mark paradigms that are taken and extended by other researchers or practitioners thus changing HCI design practice and our understanding of how technology can take part in our everyday lives and work."

Therefore, visions also serve well in the training of the next generation. As explained by P59, they "end up being anchoring points to train students to understand pivotal moments in the field."

5.3.3 **3** *Visions give us perspective.* A highly consistent theme in responses is that visions can give us a new perspective on computing (21.6% of responses). P14 claims: "It influences the researcher's mental model of (a) what is possible (b) what to strive for". P167 describes the long-term perspective afforded by visions.

> "HCI research is more than other areas future driven. HCI researchers often envision a future that may still be decades ahead of us, and then design for it. In other areas there's more focus on today's challenges."

Many respondents attested to this widening quality, mentioning that a vision helps "imagine" the future (P69, P133, P52), "think big" (P227), and build "a full picture of HCI research" (P26), ensuring we have a "global vision before jumping into small details" (P246). At the same time, visions help us think about concrete aspects of the future. For instance, they can focus on technology (P7: "Because visions allow techology to advance or take over areas that were not imagined before."), human behaviour (P234: "In a rapidly evolving technological landscape, it is essential to understand human behaviour in relation [...] to technology"), or society at large (P96: "[...] to contribute to broader societal problems/ issues with their research as it includes public money, time and other environmental resources").

5.3.4 **4** *Visions give us drive.* Visions can give us drive to pursue a certain research direction (21% of responses), "motivating potential avenues of research" (P77) and "creat[ing] enthusiasm" (P188).

The term "inspire" came up in many responses (10.4% of responses). Respondents phrased this benefit of visions as targeting "other researchers" (P145), in particular "younger researchers" (P265), inspiring action by cultivating "new ways of thinking" (P255) or "to go on a journey" (P29). Finally, P110 adds: "most people need

Benefit	% of answers	Summary
1 Visions guide us	26.2	Visions provide individual researchers with a direction to focus efforts in the vast space of possibility with computing.
2 Visions initiate and structure paradigms	25	Visions structure HCI into subfields. Vision texts are important in the formative years of a subfield; bringing a community together to label and align their research.
3 Visions give us perspective	21.6	Visions help us to think about new technologies beyond emerging trends, considering how we can contribute to broader societal problems.
4 Visions give us drive	21	Visions inspire and motivate researchers to pursue a common topic, rallying the field in a unifying way.
5 Visions provide a narrative	6.4	Visions help explain complex topics in relevant terms by providing a narrative along with concrete use situations, helping to justify pursuing certain research.
6 Visions support critical reflection and discussion	4.1	Visions frame critical reflection via provocation and debate on the social, ethical, and political implications of emerging technologies.

Table 3: Benefits of visions, identified in the responses to the question "why/why not?" to elaborate on their (dis-)agreement with the statement "Visions are important to HCI" (N = 172).

some sort of inspiration, otherwise it all becomes incremental improvements".

This inspirational function of visions can motivate researchers "to further others' ideas" (P64) and "to work in the same area." (P176). P136 further elaborates:

> "Visions have an obvious inspirational role, but are particularly useful in getting many people on board with ideas (e.g., many people might understand what ubiquitous computing means in the Weiser sense) and this can help rally the field in a consistent way."

5.3.5 **5** *Visions provide a narrative.* Even in scientific disciplines, storytelling plays a pivotal role in framing the relevance of any research area and justifying certain research directions (noted in 6.4% of responses). As expressed by P208: "They set a basic narrative that structures research along them (for better or for worse)". P239 draws the following parallel to mythology:

> "I think visions, no matter if realistic or sci-fi-esque, are like myths or narratives we create about the meaning of our work and, through extension of that, our selves and how or who we want to be. This is why I consider visions especially relevant to marginalised groups who usually don't get as much say in what is going on: presenting others with a vision from a different perspective is powerful and can serve collective liberation, saying: "this is how it could be" in ways that may not have been considered by the established community before."

As other respondents elaborate, these narratives then serve to "inform and help justify new research directions" (P18) and "help translate complex topics into more understandable or relevant terms for broad audiences." (P244).

5.3.6 **6** *Visions support critical reflection and discussion.* Beyond simply giving us perspective and expanding our view of technology, visions also provide important reference points for critical reflection and discussion within our field. Yet, this benefit is only highlighted by a small sample of respondents (4.1%). P171 articulates elegantly how visions can benefit researchers as a source of critical reflection:

> "Visions play an essential role in HCI because they allow us to explore the social, ethical, and political implications of emerging technologies before they become real. Technology may have limitations today, but our imagination must not be constrained by them. By imagining possible futures, we can reflect on what kind of world we want to create, and what forms of interaction, agency, and control are desirable — or dangerous. Vision-driven research is not about prediction, but about direction and provocation."

Other respondents agree with this sentiment; that visions are "challenging existing paradigms" (P262), "framing critical reflection on the societal implications of technology." (P282), and finally, "[...] even if one is not agreeing on a given vision, it gives a good basis for discussions" (P191).

5.3.7 Meta-observations based on the benefit analysis. It is noteworthy that one of the most higlighted benefits for researchers is a vision's ability to give us perspective (24.8%), while at the same time, only few researchers highlight that visions serve to facilitate critical reflection (4.6%). We return to this observation in the discussion.

5.4 Pitfalls of Visions

The survey revealed several aspects of visions that respondents considered pitfalls because they negatively influence the ideals or practices of research. These pitfalls arose mainly in response to the question *Visions can negatively impact the HCI field.* We identified five pitfalls (see Table 4).

5.4.1 **1** *Visions restrict.* Many respondents (24.9%) suggested that visions restrict HCI. This means that focusing on a particular vision may prevent researchers from seeing and exploring alternatives. In the respondents' words, visions may "restrict" (P14), "limit" (P161), "narrow" (P104) or "stifle" (P65) research.

One consequence of this restriction is that a vision-following researcher might miss alternatives, as suggested by P15: "we may

Pitfall	% of answers	Summary
1 Visions restrict	24.9	Visions can narrow research, stifling alternative ideas and leading to tunnel vision.
2 Visions lead astray	17.8	Poorly formulated visions can misdirect research efforts and waste valuable resources.
3 Visions disregard real problems	17.2	Idealized visions may overlook present-day needs and practical challenges in HCI.
4 Visions make us uncritical	15.4	Visions may suppress critique and reflection, encouraging uncritical acceptance and dogmatic thinking.
5 Visions generate hype	9.5	Visions may create unrealistic expectations among stakeholders, inflating their perceived value.

Table 4: Pitfalls of visions, identified in the responses to the question "why/why not?" to elaborate on their (dis-)agreement with the statement that visions can negatively impact HCI. N = 169 participant responses.

be pursuing something that is not worthwhile, when something far more interesting and impactful is revealing itself". Other respondents talked about how visions could cause you to "overlook" alternatives (P104), "prevent thinking outside the box" (P121), or "create tunnel vision" (P219).

Visions may also restrict access to other viewpoints. P171 expressed this as follows:

> "While visions play an important role in inspiring HCI innovation, they can also reinforce structural inequalities. Many technological futures are imagined from privileged perspectives, failing to account for the digital divide, accessibility issues, or the lived realities of marginalized communities. For instance, smart home or metaverse visions often assume universal connectivity, technical literacy, and economic capacity—conditions that are far from reality for many users."

5.4.2 2 *Visions lead astray.* A large theme (17.8%) suggested that visions may lead research astray and, in fact, *have* led HCI research astray in a number of cases. Although this may be a consequence of some of the other types of pitfalls, it was often the main focus of participant responses. For instance, P93 pointed out that "A poorly formulated or counterproductive vision can waste an enormous amount of time, energy, and resources". Others spoke of being on a "wrong path" (P41) or going down a "rabbit hole" (P77). Even just the activity of formulating visions may led the field astray; particpant P8 cautioned as folows:

> "There is only so much visionary work that can be done and so the onus is on being aware of the existing literature and not overly contributing visions to an area that is already decently explored."

Being led astray could then harm junior researchers by "leading to losing too much students' brain power in a useless direction" (P124) or compromise the H in HCI: "the field sometimes steers away from human experiments, overly focused on prototypes" (P67).

While some blamed the visions themselves, others (at least nine respondents) argued that it depends on "the way they are pursued" (P7) and whether they are "applied, controlled, or maneuvered carefully" (P43). This motivates taking a critical approach to working with and taking guidance from visions.

5.4.3 3 *Visions disregard real problems.* Another often-mentioned negative impact of visions (17.2% of responses) is that in their focus on a certain future, they may ignore current, pressing problems. Respondents describe this with phrases like "being out of sync with human reality" (P265) and "misleading if too detached from practice" (P195), and "may not be relevant to present-day needs and issues" (P262). P255 was particularly eloquent about this:

> "I see it as a double-edged sword, since visions can also negatively impact the HCI field by promoting overly idealized or unrealistic expectations. There is the risk of emphasizing technological possibilities while downplaying practical limitations, such as usability challenges, diverse user needs, and social or ethical considerations. This in turn can lead to misaligned research priorities and technologies that fail to address real-world contexts."

While visions might give focus and drive, they may also ignore both practical steps needed to fulfil them and a concern for real-world problems, as described by another respondent(P266):

> "In my view, overemphasis on visionary thinking without sufficient focus on deployment and realization can lead to a disconnect between conceptual ideas and real-world applicability. Visions require continuous iteration and validation through practice to ensure their relevance and feasibility within technological and societal contexts. Without this balance, the field risks being overly biased toward speculative ideas at the expense of tangible progress, potentially stalling innovation and reducing the practical impact of HCI research."

Disregarding real-world problems, then, "may negatively impact the outcomes/standing of the HCI field. They may lead to a perception of HCI as a 'head in the clouds' kind of field" (P201), and the field may overlook "less 'bold' but mundane challenges that HCI work perhaps should also look into" (P94).

5.4.4 4 *Visions make us uncritical.* 15.4% of the responses suggest that typical benefits of scholarship in HCI—being critical, evidence-based, and considering unintended consequences—are shortcircuited in some uses of visions.

One longer explanation of this came from P269:

> "As a scientific field, I think visions can negatively impact the HCI research. Everybody has vision, but a scientist gives evidence. Sometimes, visions in HCI may only focus on narratives, but neglect the quality

> of evidence. I don't want to say visions are useless because some of them are inspiring. I want to say that we need to consider evidence of a vision to decide if the vision is convincing."

Other variations of this pitfall include that visions could "feel like you are following a guru rather than science" (P226) or that their vagueness can lead to visions being "used more for name-dropping to justify research, rather than to guide it meaningfully" (P197).

Another set of answers concern the uncritical following of the tropes and dogmas that visions may invite. These answers suggest that visions may discourage "critical thinking" (P88, P250), "critique" (P225), "contrasting opinions" (P191), and "a different perspective" (P196). One participant described this concern as follows (P191):

> "Too much focus on one specific vision can make it hard to break out of its influence; proposing contrasting opinions and visions can be shut down imediately without given it some deeper thoughts"

So here the lack of dialogue, and the failure to "reflect on the politics and naively follow visions as something 'good' " (P110), suggests that visions can indeed make us uncritical in our acceptance of them.

At least 10 respondents noted that visions can cause us to disregard the unintended consequences of technology, a topic to which HCI usually pays careful attention. For instance, P44 noted: "If the unintended consequences of such visions are not anticipated, popular visions can easily intensify challenges such as misinformation, inequality, environmental resources consumption etc".

5.4.5 **5** *Visions generate hype.* Finally, some respondents (9.5%) raised the concern that visions can generate hype (and potentially overhype), meaning that visions are promoted in ways that make them seem more important than they really are. P2 expressed this as follows: "Highly ambitious visions can sometimes create unrealistic expectations among the public, investors, and even researchers themselves".

The people affected by the hype vary. Four respondents mentioned that the public could potentially be mislead by visions. Visions may also serve as a mechanism for obtaining funding through the hype, as expressed by P214 that " 'Social Robots' also feel like a scam by now, a dusty 1980s vision with the only purpose to acquire grant funding but no positive real-world impact". Finally, P95 criticizes the CHI community itself for hyping visions:

> "The incessant need for 'narrative', particularly from venues like CHI, can lead researchers to overextend and try to create mountains from molehills. Not everything can be a revelation, nor should it try to be."

5.4.6 Meta-observation based on pitfall analysis. With the above harms and pitfalls (**1**—**5**), it is noteworthy that a large fraction of responses (17.8%) did not perceive any negative consequences of visions in HCI.

For instance, P72 stated: "I don't think they are prescriptive enough to constrain or hinder work". Others echoed the sentiment, such as P279: "One does not necessarily have to buy into a vision entirely. Perhaps, in short, it may be better to have something rather than nothing.", or as P267 puts it: "The value of visions remains as they are just one of many alternatives, even if the visions in the end are unrealistic or 'misleading"'. Generally speaking, this group of respondents claims that, despite their potential harms, visions are unavoidable and necessary in research.

6 THE HCI RESEARCHER'S PRACTICES AROUND VISIONS

As the final analysis, we examine the present-day research practices around visions, considering how today's researchers read classic visionary texts (Section 6.1) and how they formulate personal visions (Section 6.2).

6.1 The Use of Visions and Three Reading Strategies

Figure 4 gives an overview of the respondents' agreement to using visions in eight central activities of scientific work: writing papers, writing grant proposals, choosing research direction, discussing with peers and students, teaching, formulating group visions, and revisiting to reread vision. Most prominently, visions are used in teaching (82% for those respondents that this question was revelant for either agreed og strongly agreed) and in discussions with students (84%), indicating a central role in education. It is notable that it is common to revisit visions (67% either agreed or strongly agreed to the question *I have revisited or reread the visions years after I encountered them the first time.* In the responses to the question *Why have you revisited or reread the visions?*, three themes of reading strategies emerged.

First, examples of reasons include revisiting for present relevance. P183 who writes: "Getting an overview of how it applies of new technology or new ideas" or P233 who revisits how present discussions of a vision aligns with the original: "Vision works are frequently refered to so many times by so many different persons and in so many different ways in other works I read, that they tend to get more fuzzy in my mind over time. So I like to go back to reflect on how much of the more recent discussions actually align with the original vision". This highlights how intepretations of visions change over time, necessitating that we actively revisit the sources to realign.

Second, respondents also re-read visions to calibrate their own work against the vision, either to compare: "Considering my own work against these visions is helpful to see what I actually achieved and where I stand with my own work in regards to this vision." (P54), or to get out of feeling stuck: "To spark creativity when I'm brainstorming around a new project, but feel stuck" (P238).

Finally, a third reason for revisiting visions is to recall them, either "to accurately communicate during presentation" (P267) or "to remind yourself where visions come from - where they are located and what limitations they have (and what politics)" (P110).

6.2 Personal Visions

Out of 124 respondents, 34 (27%) answered that they had formulated a vision for themselves. Looking into how these were formulated, we identified two large clusters: *value-driven visions* (11/34) and *variations of existing visions* (14/34), while a small cluster was purely interest-driven (4/34) and some unintelligible (5/34).

We see HCI researchers being driven not by a concrete technological vision but by, for instance, "A world where technologies

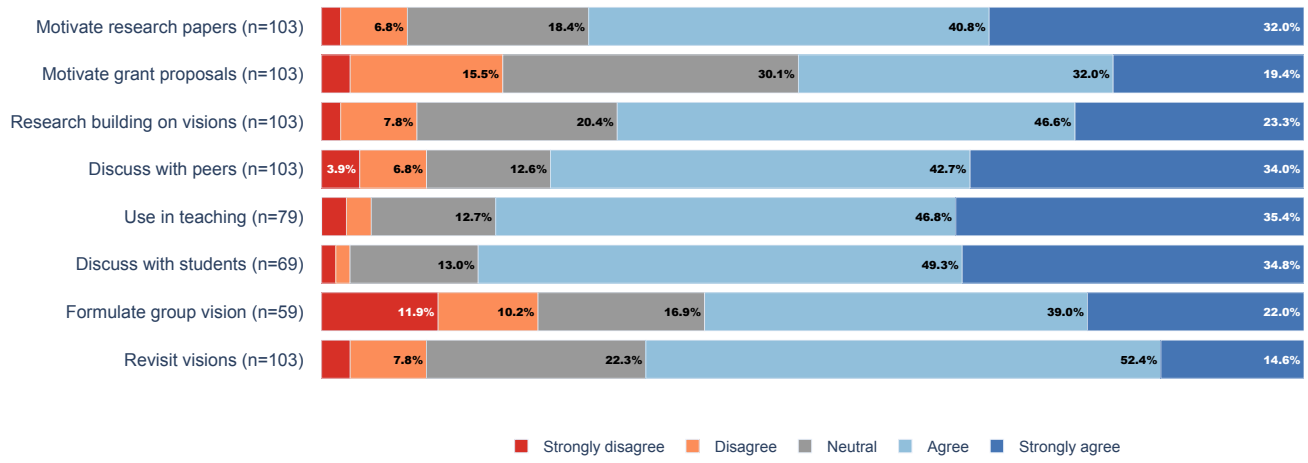


Figure 4: Engagement with visions: how (and how much) HCI researchers engage with visions. Note that the *n* differs because three of the questions had the option *not applicable* if the participant did not teach, supervise students, or lead a group.

make life better for everyone" (P101), "I want a society where people work less and play more" (P99), "I think a lot of HCI, by ignoring marginalised perspectives, gets a lot wrong, and it would benefit the field to work FROM the margins TO BEGIN WITH rather than as an afterthought" (P256), or "I want a less cruel world and I think technology can help - but not what we have right now, because what we have right now tends to entrench cruelty despite all the best intentions." (P117). These formulations of visions are value-based and do not mention a particular solution in the context of computing.

The largest cluster of personal visions are variations of existing visions (14/34) (most often with direct attribution) such as "[...] I envision an AR ecosystem where: - We can have novel + beneficial, yet privacy-friendly, interactions with AR [...]" (P255), "(Small vision within the metaverse) Avatar redirection and subjective multi-user realities [...]" (P80), or take on existing visions such as P155 who explicitly refers to Ubicomp: "To create intelligent, inclusive, and embodied computing systems that extend beyond screens—integrating seamlessly into diverse physical environments, enabling underserved communities, and bridging the gap between digital perception and human experience". Of all 14 variations, four are on AR/XR, three are explicitly variations on Ubicomp, and two on tangible computing, so these align with the most common visions that respondents mention (as seen in Table 2). Here, existing visions provide a landscape in which individual researchers chart their own paths.

A few respondents present their personal vision as being interest- or passion-driven (4/34): "Passion for data collection systems and for data-driven modeling of techno-social processes." (P59) or "I have always been interested in creativity and creation for as long as I can remember" (P133). Some political: "[...] programming is power and a means to increase personal productivity and potentially wealth, access should increased", "gender/racial inequity in CS, accumulation of wealth into few tech overlords" (P50). And some present their vision as taking a specific philosophical approach to tackle general HCI problems: P166 writes "Technology should mediate social relations in ways that allow people to scaffold practices for others in ways that align to their purposes." and later when answering *Which prior visions (if any) does your personal vision draw upon?* they write "The activity theory tradition".

Together, these accounts of personal visions illustrate the heterogeneity of what drives HCI researchers. They shed light on the values, commitments, and imaginaries that researchers draw upon when motivating their work.

7 DISCUSSION

In discussing our main results and their implications (Section 7.1), we present a vision-critical perspective to foster a more scholarly approach to working with visions (Section 7.2), including a set of tensions (Section 7.3) and reading strategies (Section 7.4) as new methodological tools for vision-criticism.

7.1 Key Takeaways from the Results

Based on our survey of 172 HCI researchers, we can make the following statements about how visions shape the field of HCI. First, our results show that visions are embedded into the field of HCI, influencing most scientific activities. A count of responses discussing this phenomenon shows that 9.2% highlight the inherent nature of visions as implicit in our field, noting that their influence on research is sometimes difficult to perceive. Visions were rated as important for all eight scientific activities in Figure 4. Although it is difficult to know whether there are biases particular to this result in our sample (e.g., toward more future-oriented researchers), it shows that they clearly are influential to these key vision-related scientific activities.

Second, visions are considered highly important and impactful by our sample of HCI researchers. Prior scholars have discussed the impact of classic visions, and presented critiques of potentially negative consequences of pursuing them, most notably with work

on the Ubiquitous Computing vision (e.g., [7, 21, 22, 59]) and sci-fi references (e.g., [22, 42, 63]). However, our paper complements these works with insights on how HCI researchers view the impact of visions on our field and what they regard as visions.

Third, there are diverse views on what can be regarded as visions. Analyzing the examples that the respondents mention as impactful on their work (Table 2), we see that visions comprise a few well-known examples (e.g., Ubiquitous Computing and Tangible User Interfaces) along with a long tail of other ideas with visionary aspects that serve to inspire HCI research. The data clearly shows that what HCI researchers regard as a vision is highly heterogeneous (as demonstrated by how the example sources they highlight in Table 2 and the way they phrase their personal visions in Section 6.2). While this diversity demonstrates the richness of HCI, respondents also raised concerns about the lack of clear vision criteria (Section 4.2). As mentioned in sections 2.2 to 2.3, prior work has started to articulate such criteria, and our work contributes to this conversation by distinguishing (uppercase) Visions from visions in designerly practices and highlighting the tensions (benefits vs. pitfalls) inherent in such Visions. However, we encourage future work to conduct deeper analyses of the vision sources presented in this paper to further extend the vocabulary for visions in HCI.

Finally, one of our most noteworthy findings is that respondents' claims to critically reflect on visions (4.1%) are underrepresented compared to how many respondents claim to teach (82%) and reread (67%) visions as a regular practice. This is despite our identified benefits and pitfalls showing that visions are a double-edged sword for HCI: They seem to help researchers gain outlook and inspiration, while simultaneously converting us toward specific movements in the field and threatening to make us uncritical and narrowly focused. Yet, despite these many pitfalls, only a small fraction of respondents explicitly mention that visions help them think critically. Together, these insights call for our field to develop a critical approach to engaging with visions for the future of computing.

7.2 Toward a Vision-Critical Perspective

HCI researchers evidently do engage with and discuss visions, and we were suprised to see how many claimed that they revisited and reread visions. While a primary purpose is for teaching, they mention a large variety of use cases for doing so (including checking their relevance today, recalibrating one's thinking, or recalling historically significant events in the field). This, we belive, is a strong indication of how important these visionary works are to the field. It shows that HCI researchers revisit them as canonical readings despite displaying less rigor in a traditional scientific sense (i.e., providing clear evidence or a strong theoretical grounding for claims of the future). The lack of a critical practice around visions can lead to misuse (e.g., P226 mentioned treating visionaries as gurus and P197 mentioned mindless name-dropping as concrete pitfalls). These examples extend the issues raised in critiques by Bell and Dourish [7], Reeves [59], and Sanchez et al. [64]. Therefore, it is evermore crucial that we develop a deliberate (re-)reading approach that avoids the pitfalls.

Similar to Dourish and Bell [21], we see strong parallels between HCI envisionment and mythology. We propose that it is useful to understand envisioning in HCI, not only as a design-oriented practice, but also as a form of *mythopoeia* (i.e., "myth-making"). As survey respondent P239 describes,

> "I think visions, no matter if realistic or sci-fi-esque, are like myths or narratives we create about the meaning of our work."

This resonates with Reeves' framing of envisioning [59], which situates visions for computing in a broader cultural practice of creating narratives that both inspire and guide collective effort, and with Sanchez et al.'s manifestation category on the underlying narratives about the future [64]. From this perspective, we propose taking a myth-critical approach [24]—or what we might call a "vision-critical approach". Rather than treating visions as isolated statements of intent, we can examine them as part of an ongoing accumulation and negotiation of visions, much like the way scientific theories evolve through successive interpretations. In a working definition of myth-criticism [2], the "myth-making" process is described as placing "emphasis on the artist's appropriation of mythological elements (traditional or original) as an inherently creative act, an act of shaping". The role of a myth-critic is then to analyze the "moment of contact" between traditions of myth and their particular manifestations—in our case, the visions that circulate in HCI—and be wary of the meta-process under which they are developed.

7.3 Tensions as a Tool for Vision-Criticism

The qualitative data (themes related to benefits and pitfalls) support the quantitative data (bar charts); they both show that visions serve as much with positive influence as with negative influence. As well put by P255, visions are a "double-edged sword". However, what is not visible at a first glance is the tensions between these two sides. Therefore, we synthesize the identified benefits and pitfalls of visions into a set of three tensions (see Table 5), highlighting that the benefits of visions also have pitfalls as their counterparts. The tensions in Table 5 can be described as follows.

First, while a vision can lead to new *insights* by broadening our perspective and provoking us to think critically, it can also lead us to *ignore* practical problems or the sheer fact that it can cause harm. For instance, visions can help avoid "jumping into small details" (P246), enabling us to "explore the social, ethical, and political implications of emerging technologies before they become real" (P171). At the same time, such future orientation might also lead us to "downplay [...] social or ethical considerations [...] and fail to address real-world contexts" (P255).

Second, its ability to steer a research field in a consistent *direction* comes with the cost of potential *misdirection*, by overly restricting or leading the field astray due to its persuasive nature. In the words of our respondents, visions "are like myths or narratives we create about the meaning of our work" (P239). These narratives serve to provide "vetted goals which motivate many" (P56) in the pursuit of a certain research direction. On the flipside, however, such narratives might also "create tunnel vision" (P219), or even worse, lead us to "waste an enormous about of time, energy, and resources".

[2]Working definition of Myth-Criticism: https://www.sas.upenn.edu/~jfarrell/from_ccat/temp/Cindy/mythcrit/index.html

Finally, a vision's ability to *inspire* innovation and initiate entire new paradigms of HCI comes with the cost of potentially *manipulating* its followers through persuation and overhype. Their "obvious inspirational role" (P136) and ability to "bring a community together" (P189) is what makes them stick for decades. However, their persuasive nature risks that visions create "unrealistic expectations" (P2) and "neglect the quality of [scientific] evidence" (P269).

7.4 Critical Reading of Visions

The tensions above facilitate critical reflection and discussion in our field. As noted above, surprisingly few respondents mention using visions for critical reflection. Although one of the most prominent benefits of 1 giving perspective (21.6%) is thematically close to the least mentioned benefit of 6 critical reflection (4.1%), they highlight an important distinction. Giving perspective is about a vision's ability to inspire, foster imagination, and widen the reader's horizon of possibilities. Critical reflection is about critical reading of a vision text to be provoked and challenge one's own thinking about the future implications of a new technology. Moreover, critical reading can also be used to challenge the thinking portraied by the vision text itself.

Along with other scholars [7, 21, 59, 63], we argue that HCI as a field needs to develop a more critical approach to envisionment. This means: (a) We need to acknowledge the inheritence of visions in our research directions, we need to, not only embrace the benefits of engaging with them, but also use them more for critical reflection and debate. (b) We need to be aware of the pitfalls in mindless pursuit of visions.

Contributing to this endeavour, we offer three tools for critical reflection; (1) overview tables for navigating the benefits and pitfalls of envisioning (Table 3 and Table 4), (2) a framework of tensions between them (Table 5), and (3) identification of three reading strategies for revisiting visions; for renewed relevance, for calibrating one's work, and for recalling key aspects (described in Section 6.1).

While these reading strategies are useful, they further highlight the need for developing a stronger critical literacy. Aligned with others [59, 64], we propose this as an agenda for future work. Future HCI classes could incorporate a critical vision reading unit. Frameworks could be developed for the peer review process to evaluate critical reading practices (i.e., how the present work operationalizes and builds on prior visions). Finally, critical reading should be adopted more deliberately by individual HCI researchers. This may involve consulting the critical futuring questions proposed by Reeves [59] or Sanchez et al. [64]. Another practical strategy would be to adopt Noortman et al.'s proposal of treating visions as *ustopias* (simultaneous utopia and dystopia) [52]. By forcing oneself to reread and interpret one's favourite vision as an "anti-vision", one may discover importantpitfalls to work against in the pursuit of the research associated with the vision. A concrete example would be reading the Ubicomp vision as one of mass surveillance and abolishment of personal ownership over computers.

A critical visioning practice does not end with the individual researcher's reading strategies. It also applies to the community as a whole, that publicly sharing and contrasting visions can serve in public debate. Recently, the UIST conference has introduced Vision Talks in the technical programme [3], which is so far mostly a one-way talk. However, fortunately, there are prior exemplary formats in our field that can serve as inspiration for future approaches to collective vision-criticism with critical debate of visions. A classic example is the debate between Weiser and Negroponte (Ubicomp vs. personal agents) [73, 78], whereas a more recent example is the CHI 2022 panel "Fabricate it or render it?" [19].

While our study shows that some HCI researchers do engage critically with visions, this is not yet established as a standard practice in the field. Given the central role of visions that our study demonstrate, we encourage future work to develop a more systematic approach to critical engagement. Specifically, the authors of this paper intend to follow up with a selection of survey respondents who offered to be interviewed to elaborate on their responses. By prompting interviewees to reflect on critical reading practices, we aim to extend the community's current reflexive methods (such as [59, 63, 64]), contributing to the further development of this this aspect of HCI practice.

7.5 Methodological Considerations

We recognize that some of our methodological choices introduced biases. In particular, we proposed a working definition of visions and provided examples to guide respondents. Although this helped ensure a shared understanding of the task, it may also have shaped responses, constraining how respondents articulated their own perspectives. Our rationale for doing so was to clarify the focus of our investigation while at the same time leaving room for interpretation. We attempted to strike this balance by offering an opportunity in the survey to provide meta-comments on the survey design choices. Some of the repondents' reflections on this are reported in subsection 4.2, where several expressed confusion around what is considered a vision. However, through open coding, we remained open to new interpretations and expansions of the working definition, and we have provided the full list of recurring visions in HCI in Table 2.

For recruitment, we focused on authors of CHI 2025 papers as our participant group. We selected CHI because it is the premier venue for the HCI field that unites the broadest range of its communities. However, this decision also created limitations. While our sample size of 172 responses is comparatively large for surveys that involve experts in a field, it represents only a small fraction of those contacted, and the respondent pool skewed toward Europe-based members of the community (Figure 1). As some visions may differ in uptake and interpretation in different parts of the world, the data cannot be taken as representative of the CHI community as a whole. For instance, computer-supported cooperative work is interpreted and practiced differently in Europe and the U.S. Therefore, visions for collaborative work may thus be interpreted quite differently. However, the findings remain valuable: Even a partial view of how researchers envision the field's trajectory offers insights into HCI's collective discourse around the future of computing.

Finally, our reliance on a survey method shaped the nature of the data we were able to collect. We had expected brief responses, but were surprised by the richness and length of many contributions.

[3] UIST '25 Vision Talks https://programs.sigchi.org/uist/2025/program/session/209518

Tension	Benefit	Pitfall
Insight vs. Ignorance	1 give perspective, 6 facilitate critical reflection and discussion	4 disregard real problems
Direction vs. Misdirection	2 guide and 5 provide narrative	1 restrict and/or 3 lead astray
Inspiration vs. Manipulation	3 paradigm shift and 4 drive/inspire	5 make uncritical and 6 overhype

Table 5: Tensions as a tool for vision-criticism: we synthesize three tensions between benefits and pitfalls for critical reflection in how we work with future visions in HCI.

However, the survey format restricted the respondents' ability to fully articulate and nuance their responses. Especially in the section on their own personal visions. The descriptions tended to be high-level, if you compare them to the vision sources they cite. This is for obvious reasons, as our data were generated under the time constraints of a short survey window (promised that the survey would take between 20-40 minutes). As such, the visions cannot be directly compared to canonical vision texts (e.g., [25, 37, 76]), which are long-form, highly polished documents produced over extended periods.

Future work might therefore complement surveys with in-depth interviews, giving respondents time to prepare, or with analyses of existing vision talks at venues such as UIST or TED, where researchers often present aspirational perspectives on the field. Nevertheless, our methodological choices allowed us to collect a unique and valuable dataset that illuminates how a segment of the CHI community conceives of envisioning in HCI. Along with our plan to conduct follow-up interviews, we also encourage others to build on this work by triangulating survey-based insights with additional complementary methods, in order to capture a fuller picture of visioning practices in the field.

8 CONCLUSION

Imagining new possible futures has always been central to HCI. Our survey of 172 HCI researchers provides a metascientific account of this phenomenon. The results show that classic as well as newer visions for computing play a prominent role in the practice of HCI researchers. At the same time, concerns are expressed regarding the pitfalls of following visions uncritically. This calls for a vision-critical practice in the field. While relevant for all kinds of visions, including those in designerly practice (with lowercase v), it is essential for the field-shaping visions (with uppercase V), which we characterize in this paper. We synthesize our survey results to derive a framework of tensions along with a set of reading strategies for engaging critically with the field-shaping visions.

One thing that is clear from this study: Future visions are embedded into the field of HCI. While one may claim to be under no direct influence from them, no one can fully engage with the field without being shaped by its paradigms and by the classic visions that helped establish them.

ACKNOWLEDGMENTS

We are grateful to pilot participants for supporting our development of the survey questions, namely, Valkyrie Savage, Tiare Feuchtner, and Marianne Graves Petersen. Moreover, a special thanks to the 172 participants from the CHI community for engaging so deeply with the topics in their survey responses.

This work was supported by research grants (101222719, BRIDGE) from the European Research Council (ERC), (AUFF-E-2022-9-33, DECLARE) from the Aarhus University Research Foundation (AUFF), and (VIL73783, TRACTION) from Villum Fonden. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the ERC. Neither the European Union nor the granting authority can be held responsible for them.

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A SURVEY QUESTIONS

Profile and Background

Q1. What is your current position?

- ☐ PhD student
- ☐ Postdoc
- ☐ Faculty
- ☐ Researcher in industry
- ☐ UX designer
- ☐ Developer
- ☐ Other: .....

Q2. What is your educational background (check all that apply)?

- ☐ Computer Science
- ☐ Engineering
- ☐ Math
- ☐ Social Sciences
- ☐ Arts and Humanities
- ☐ Design
- ☐ Information Science
- ☐ Education
- ☐ Business or Management
- ☐ Other: please specify .....

Q3. In which part of the world do you primarily work?

- ☐ Europe
- ☐ Asia
- ☐ Australia
- ☐ North America
- ☐ South America
- ☐ Africa

Q4. How many years have you worked on or studied HCI full time?

- ☐ <1
- ☐ 1–2
- ☐ 3–4
- ☐ 5–7
- ☐ 8–10
- ☐ >10

Q5. What is your particular area of research? (please be more specific than HCI)
(free text)
. . . . . .

Q6. Please tick the conferences where you have published your research (check all that apply).

- ☐ CHI
- ☐ UIST
- ☐ DIS
- ☐ CSCW
- ☐ IUI
- ☐ Ubicomp
- ☐ INTERACT
- ☐ TEI
- ☐ MobileHCI
- ☐ C&C
- ☐ ICMI
- ☐ VIS
- ☐ IEEE VR
- ☐ ISMAR
- ☐ SIGGRAPH
- ☐ SIGGRAPH Asia
- ☐ SUI
- ☐ HRI
- ☐ 3DUI
- ☐ ASSETS
- ☐ CHI Play
- ☐ IDC
- ☐ EICS
- ☐ LAK
- ☐ ETRA
- ☐ PervasiveHealth
- ☐ NordiCHI
- ☐ CUI
- ☐ AVI
- ☐ IDRS
- ☐ RecSys
- ☐ Other: . . . . . .

The Role of Visions in General

Q7. Visions play an important role in HCI research.
☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree
- Why/why not?
(free text)
. . . . . .

Q8. Visions can negatively impact the HCI field.
☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree
- Why/why not?
(free text)
. . . . . .

Q9. Visions have played no role in my research. (NB: If agree this skipped to Wrap-up and Future Contact)
☐ Agree ☐ Disagree
If you agree, please tell us why.
(free text)
. . . . . .

Examples of Visions that Influence Your Work

Vision 1
What is the vision?
(free text)
. . . . . .

What is the source (e.g., publication or talk) that best describes the vision?
(free text)
. . . . . .

Which problems is this vision addressing?
(free text)
. . . . . .

How were you introduced to this vision?
(free text)
. . . . . .

How have you used this specific vision for your research?
(free text)
. . . . . .

How important is this vision for your research?

- ☐ Not at all important
- ☐ Slightly important
- ☐ Moderately important
- ☐ Important
- ☐ Very important

The vision has been realised in accordance with what was intended by the original source.
☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

Which aspects of the vision have been realised as of today?
(free text)
. . . . . .

What is still missing?
(free text)
. . . . . .

Vision 2 (Optional)
Repeat the same fields as Vision 1.
Vision 3 (Optional)
Repeat the same fields as Vision 1.

How You Use Visions

Q10. I have used visions explicitly to motivate my research in papers.
□ Strongly disagree □ Disagree □ Neutral □ Agree □ Strongly agree
Q11. I have used visions explicitly to motivate grant proposals.
□ Strongly disagree □ Disagree □ Neutral □ Agree □ Strongly agree
Q12. Building on visions is important for my research.
□ Strongly disagree □ Disagree □ Neutral □ Agree □ Strongly agree
Q13. I discuss these visions with my academic peers.
□ Strongly disagree □ Disagree □ Neutral □ Agree □ Strongly agree
Q14. I talk about the visions in my teaching.
□ N/A □ Strongly disagree □ Disagree □ Neutral □ Agree □ Strongly agree
Q15. I discuss the visions with my graduate/PhD students.
□ N/A □ Strongly disagree □ Disagree □ Neutral □ Agree □ Strongly agree
Q16. I have formulated a vision for the research group I manage.
□ N/A □ Strongly disagree □ Disagree □ Neutral □ Agree □ Strongly agree
Q17. I have revisited or reread the visions years after first encountering them.
□ Strongly disagree □ Disagree □ Neutral □ Agree □ Strongly agree
If yes: Why did you revisit them, and what did you gain?
(free text)
. . . . . .
. . . . . .
(Optional) If the above does not cover how you use visions, please describe your use.
(free text)
. . . . . .
. . . . . .

Your Personal Vision (Optional)

Q18. I have formulated a vision for myself. □ Yes □ No
Q19. Please summarise what your vision is.
(free text)
. . . . . .

Q20. What motivates your vision?
(free text)
. . . . . .

Q21. Which problems (if any) motivate your personal vision?
(free text)
. . . . . .

Q22. Which prior visions (if any) does your personal vision draw upon?
(free text)
. . . . . .

(Optional) If you have difficulties answering the above, please comment or explain why.
(free text)
. . . . . .

Wrap-up and Future Contact

Raffle (optional). If you wish to enter the raffle for prizes, please enter your full name and email below.
Full name: . . . . . .
Email: . . . . . .
Opt-in to be contacted for a follow-up interview: □ Opt-in
Meta-comments about the survey (optional).
(free text)
. . . . . .