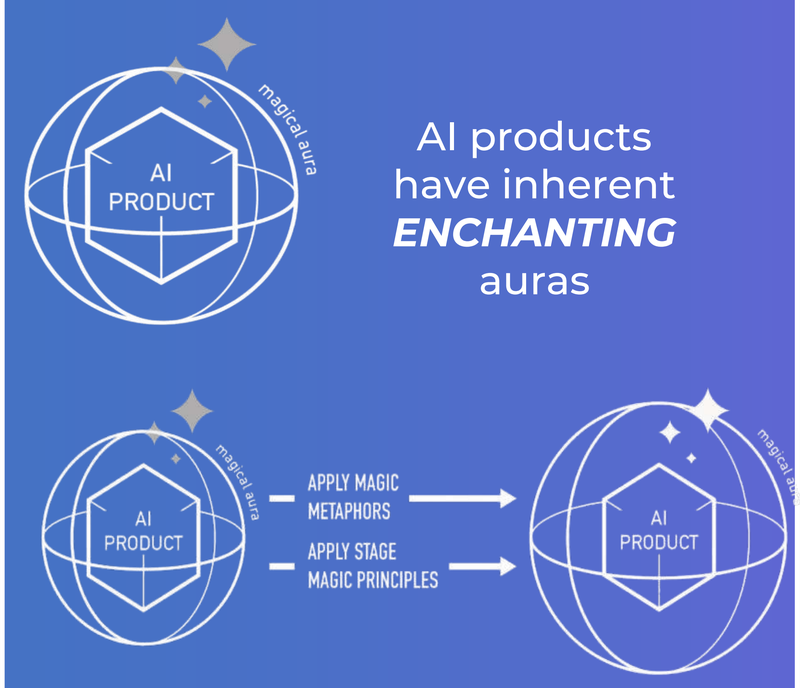
(UN)MAKING OF AI MAGIC: A TAXONOMY

PROPOSAL:



AI products have inherent ***ENCHANTING*** auras

Design Principles can enhance the aura (***ENCHANTMENT***) or suppress it (***DISENCHANTMENT***)

THE GOAL:

Constructing a taxonomy to identify DESIGN PATTERNS *in AI Products and how they work to enchant / disenchant users*

THE METHODOLOGY:

Discuss common controversies and discourse around emerging AI technologies and ***ANALYSE THE DESIGN PRINCIPLES OF 52 DIFFERENT STUDENT PRODUCTS*** *from a masters course in AI design and develop a taxonomy to classify the principles*

ANALYSIS OF 50 PROJECTS

LUMI*: embodying light energy through the magic metaphor of an enchanted lantern*

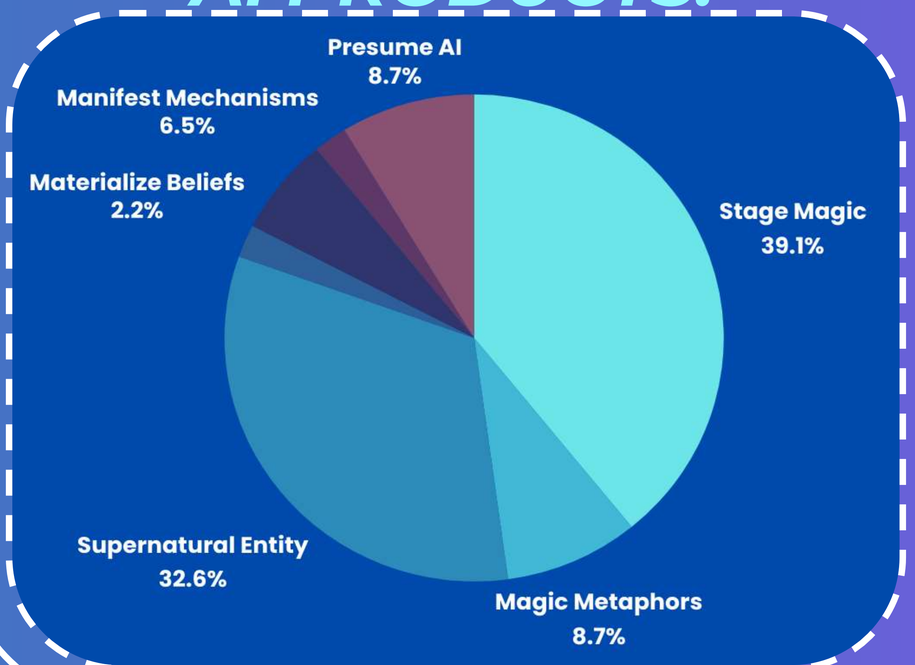
UNDER THE LOOP: *citizen participation in placemaking using a magic magnifying glass to collect data and opinions*

REFRAME YOUR THOUGHT: *generative AI techniques that create the illusion of a superintelligent being assisting in therapy*

FUTURE DIALOGUE: playful control of small hom appliances through training on personal vocal languages.

RESULTS OF ANALYSIS:

PRESENCE OF DESIGN PRINCIPLES FOUND IN AI PRODUCTS:



PRINCIPLES TO ENCHANT:

APPLY STAGE MAGIC PRINCIPLES
The use of “smoking mirrors” to enhance engagement

Summoning AI as a supernatural entity
Presenting the AI as a powerful being further mystifying it

Presume AI
Product is Designed to be enhanced by AI

Applying Magic Metaphors
Playing on magical concepts in the design of the product

PRINCIPLES TO DISENCHANT:

Play with AI
Letting users engage in a cycle of curiosity and understanding

Materialize Beliefs
Playing on the beliefs people already hold about AI

Manifest Mechanisms
Making the methodology more Apparent

DISCUSSION:

- ***TAXONOMY PURPOSE:***
  - *a nascent design theory*
  - *allows designers to navigate the AI space when designing AI products*
  - *helps designers take responsibility for their enchanting product’s effects*
- ***PROJECTS UNDER THESE PRINCIPLES***
  - *multiple design principles are usually present*
  - *however, one will usually dominate the others*
  - *combining multiple design principles causes each principle to affect the product differently*
- ***(DIS)ENCHANTING INTERACTIONS***
  - *disenchanting trumps enchanting*
  - *manifest mechanisms and materialize beliefs always disenchant*
  - *important to have a balance between the two types to maintain a good mix of user interest and designer transparency*

CONCLUSIONS:

- ***DESIGNERS BE AWARE:***
  - *your chosen design principles affect the way we as a culture perceive AI*
  - *take responsibility for the social perceptions of AI and foster them in a way that does not encourage deception of the public*
- ***THE TAXONOMY IS PRIMITIVE:***
  - *the taxonomy is still inherently young, it should be strictly adhered to, but rather to reflect on what kind of impact we leave when designing AI products*
  - *the taxonomy leaves room to be further developed as not all interactions between principles have been mapped*
- ***ENCHANTMENT IS INEVITABLE:***
  - *newer technologies including AI are bound to enchant with promises of innovation and*
  - *this enchantment will also affect designers*
  - *important for designers to approach the technology critically despite its alluring aura*
- ***ENCHANTMENT IS NOT A BAD THING:***
  - *more important is the balance of enchantment and transparency / understanding*
  - *the ‘PLAY WITH AI’ design principle is useful here as it helps to bolster understanding while maintaining the enchanting aura of most AI products*

BACKGROUND:

MARIA LUCE LUPETTI

From the TU Delft, concerned with human entanglement with the Artificial World,focusing on using design to promote responsible development of AI.

DAVE MURRAY-RUST

Associate Professor from the TU Delft. Studies focus on how people interact with algorithms and technology. Trying to balance privacy,choice and identity.

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Websites Need Your Permission Too – User Sentiment and Decision-Making on Web Permission Prompts in Desktop Chrome

Authors
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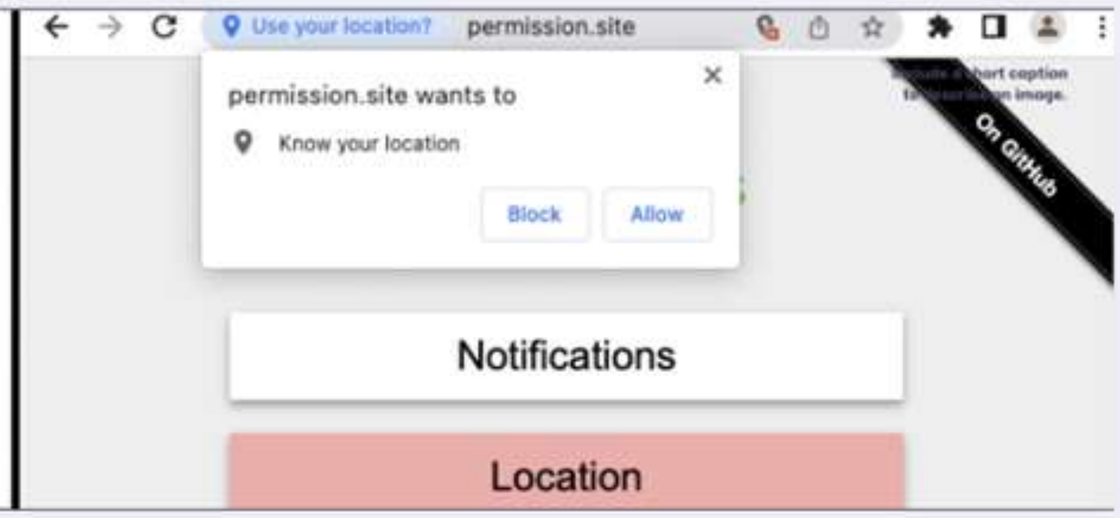
Affiliations
Google

Introduction

Users are often asked when entering a website if they shall approve access towards certain features through permission prompts. This decision is very important towards users as a security measure and depending on how or what is requested can impact their decision.



Objective

- To analyze how users interact and respond to permission prompts in the web particularly on desktop Google Chrome.
- To identify what influences and which factors affect users in accepting, denying dismissing or ignoring permission prompts.
- To examine the importance of contextual information in users' decision making towards granting permissions.

Methodology

- Telemetry Data Analysis
  - Over 100 million Chrome installations analyzed.
- Experienced Sampling Approach
  - 25,706 Chrome users answered a questionnaire.
- Statistical Testing
  - Omnibus tests
  - Logistic Regression

User Action	Capability	# not annoying	% not annoying	# easy	% easy
accepted	notifications	722	72.6%*	505	50.8%§
	geolocation	739	72.1%*	595	57.9%
	microphone	826	79.1%**	676	64.8%*
	camera	835	80.0%**	643	61.6%
denied	notifications	439	42.3%§§	651	62.7%
	geolocation	499	47.8%§§	699	67.0%*
	microphone	230	67.6%	196	57.6%
	camera	124	70.9%	102	58.3%
dismissed	notifications	578	55.7%§	486	46.9%§
	geolocation	522	56.7%§	506	54.9%
	microphone	251	66.2%	200	52.8%
	camera	112	70.9%	78	49.4%
Total		5,877	63.9%	5,335	58.8%
Omnibus χ^2			$\chi^2(11) = 671$, $p < .0001$		$\chi^2(11) = 156$, $p < .0001$

Results

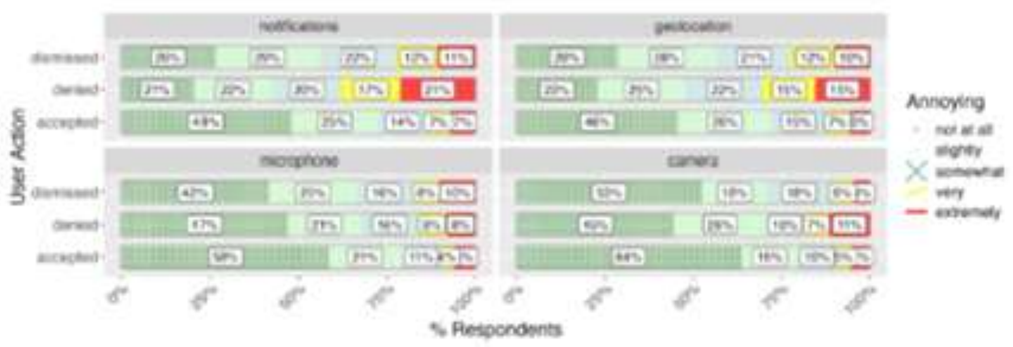
Overall, 63.9% did not find permission prompts annoying.

The most ignored or dismissed prompts were for geolocation and notifications.

- Users felt that these were annoying and disruptive.

Prior user interaction with a website heavily influences their decision making for permission prompts.

- Ignore rates decreased by 21% and allow rates increased by 18% overall.
- Geolocation is the most influenced with allow rates increasing from 9% to 27.4%



Discussion

- Permission prompts are more annoying when users do not allow.
- Availability of contextual information for a given benefit is associated with allowing.
- Being able to ignore or dismiss permission prompts is useful.
- Prior user interaction is associated with the prompts being allowed and less annoying.

Conclusion

We notice key differences in user behaviour towards permission prompts when looking at desktop Chrome

- Less annoying when prompts are allowed
- The ability to ignore and dismiss is important to users

Future Outlook

To address these two key issues, the Chrome team is currently exploring an alternate approach to permission prompts with more contextual information and resolve the issue of users not noticing prompts.

AI-Assisted Causal Pathway Diagram for Human-Centered Design

Abstract

This paper explores the integration of causal pathway diagrams (CPD) into human-centered design (HCD), investigating how these diagrams can enhance the early stages of the design process.

Background

The information in this paper is from the CHI conference on human factors in computing systems 2024.

It was published in May 2024.

Authors - Ruican Zhong, Donghoon Shin, Rosemary Meza, Predrag Klasnja, Lucas Colusso, Gary Hsieh

Objectives

Integrating Causal Pathway Diagrams (CPD) into Human-Centered Design (HCD) to enhance creativity, reduce cognitive workload, and improve communication.

- The team developed an AI-assisted CPD Plugin for the Miro platform to support designers in structured design processes.

Research

Material

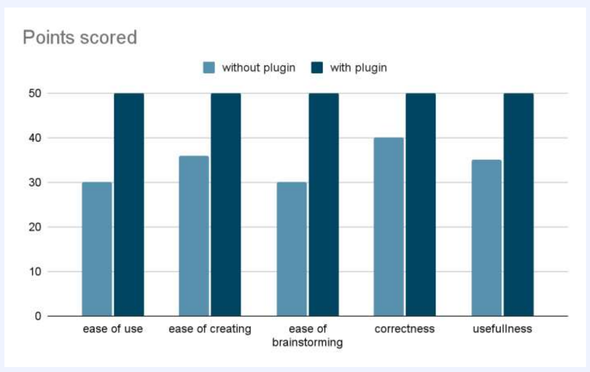
20 design practitioners participated in design sprints, using Miro with and without the CPD plugin.

Analysis

Divergent & Convergent Thinking.

Reduced Cognitive Workload

Increased Creativity



Methodology

A user study was done with 20 people to test the implementation of CPD into HCD using a plugin developed in Miro. It lets users create diverse visual elements, such as text boxes, circles, and rectangles on a collaborative board.

Results

20 design practitioners participated.

Compared workflows with and without the CPD plugin during structured design sprints.

Key Findings:

Divergent & Convergent Thinking: CPD supports both phases, enhancing the creativity and structure of the design process.

Cognitive Workload: Significantly reduced, allowing designers to focus on ideation rather than mechanics.

Creativity: AI-assisted suggestions helped foster more innovative ideas.

Conclusion

AI-Assisted CPD: A powerful tool for enhancing the design process by reducing cognitive load, supporting creativity, and promoting evidence-based design.

Study Implications: Highlights the potential of AI in augmenting human creativity, with strong ethical and responsible usage considerations.

Future Outlook: AI-assisted design tools like the CPD plugin for Miro are advancing HCI, emphasizing the intersection of creativity, AI, and ethics in design.

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