CS122 Class 8: Making things harder

https://unsplash.com/photos/toddlers-standing-in-front-of-beige-concrete-stair-bJhT_8nbUA0

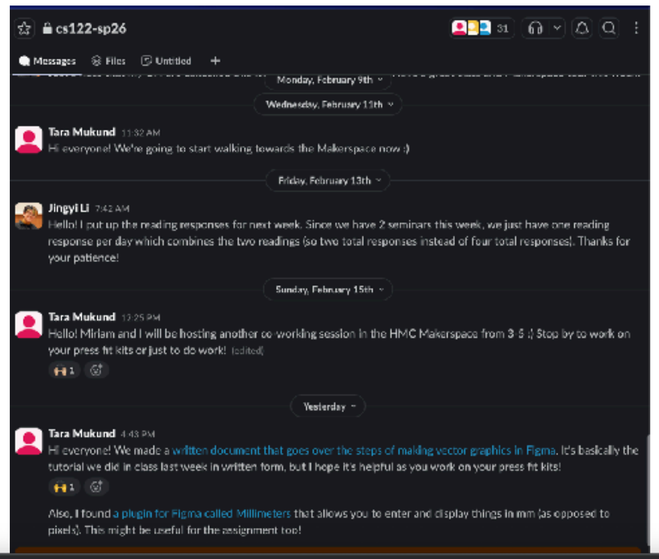
Class 8 agenda

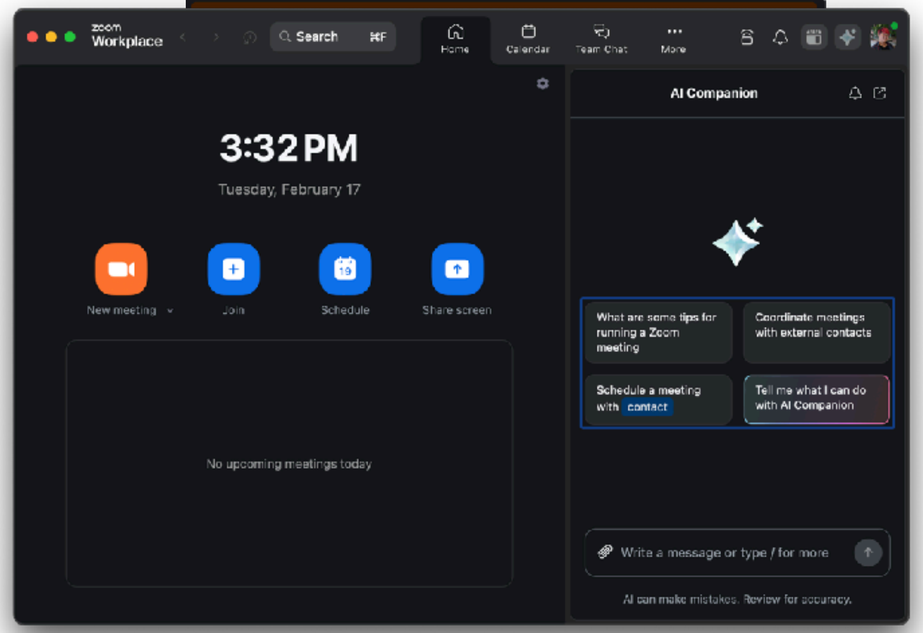
- Zipcrit
- Lecture: Making things harder
- Break
- Seminar

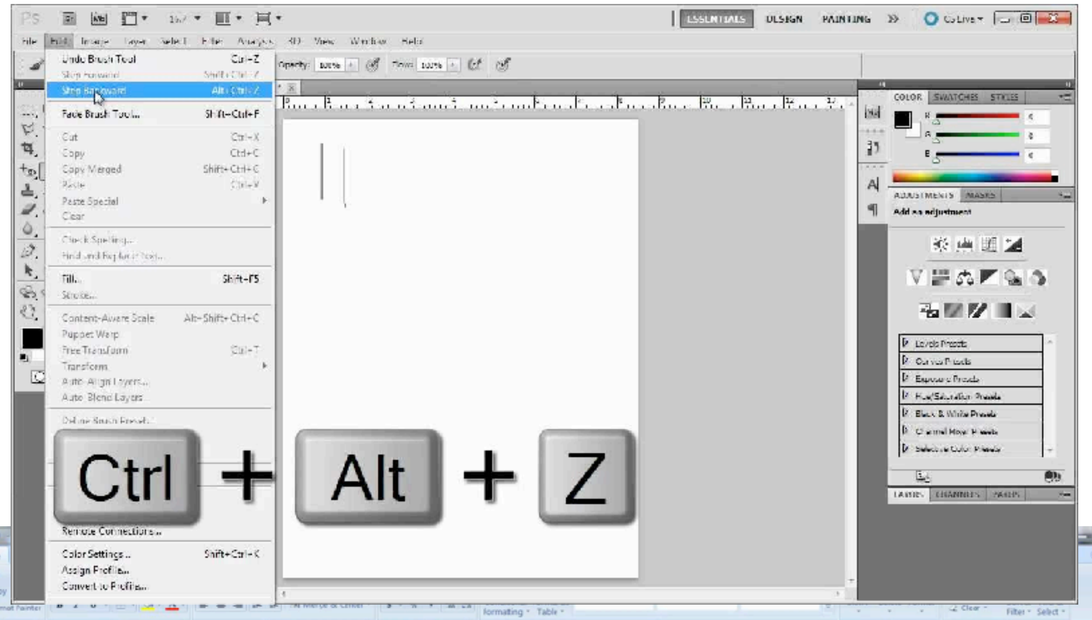
Making things harder

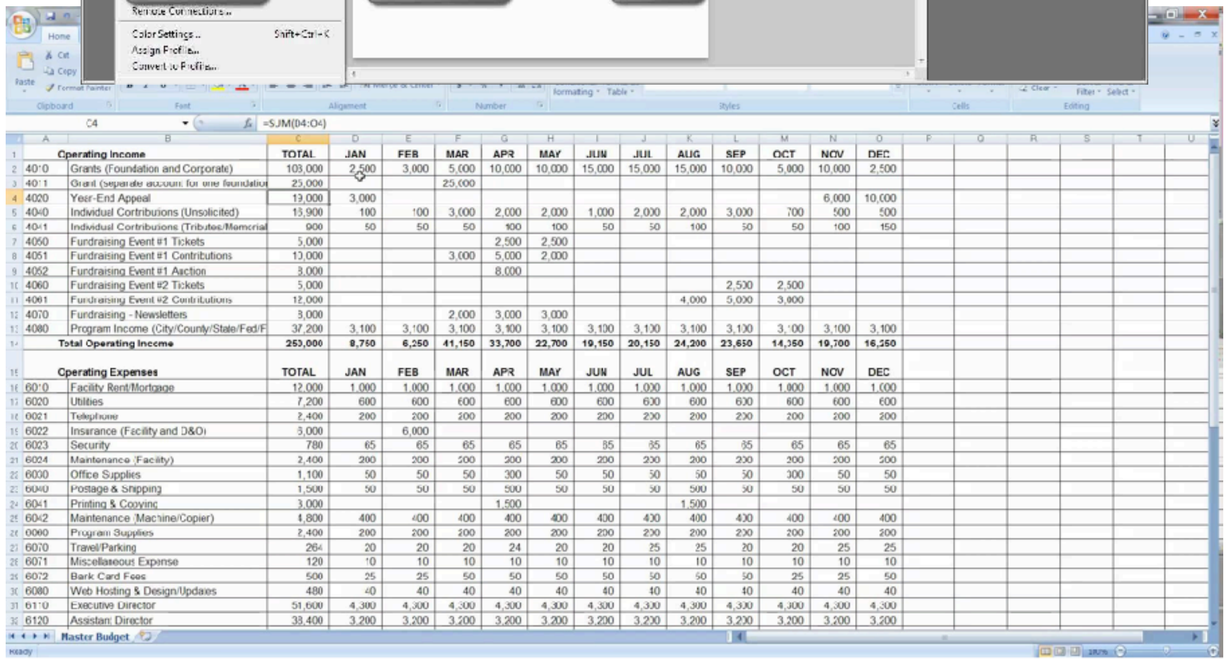
For a long time, tools have made things easier

For a long time, software has made things easier









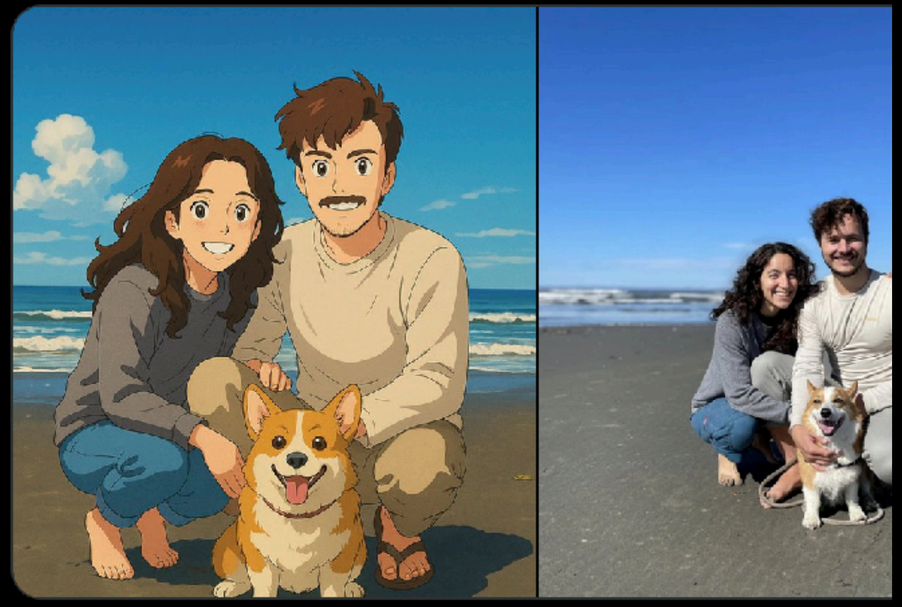
Q: Why would you want a tool that made things harder?

(Can you think of specific examples or tasks?)

It’s easy to generate images

Grant Slatton
@GrantSlatton

tremendous alpha right now in sending your wife photos of ya converted to studio ghibli anime



1:26 PM · Mar 25, 2025 · **28.9M** Views

1.8K 4.4K 42K 16K

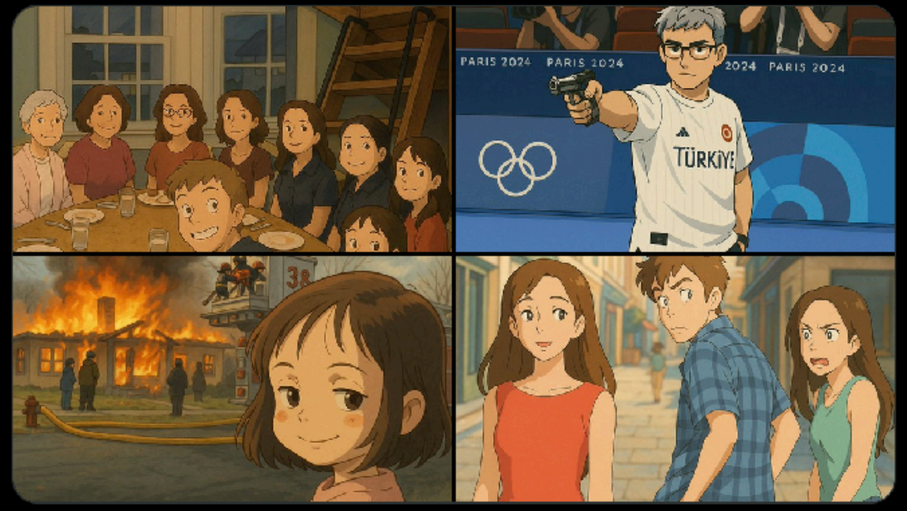
Barsee
@heyBarsee

Subscribe

It's been 24 hours since OpenAI unexpectedly shook the AI image world with 4o image generation.

Here are the 14 most mindblowing examples so far (100% AI-generated):

1. Studio ghibli style memes



6:43 AM · Mar 26, 2025 · **31.6M** Views

2.3K 17K 157K 75K

The White House @WhiteHouse · 6h

The White House @WhiteHouse · Mar 18

🇺🇸Virginia Basora-Gonzalez, a previously deported alien felon convicted of fentanyl trafficking, was arrested by @ICEgov in Philadelphia after illegally reentering the U.S.
…

8.2K 21K 85K 23M

It’s hard to be culturally accepted/appreciated

"Insult To Life Itself": Ghibli Founder Hayao Miyazaki On AI-Generated Art

While people reimagine themselves in the Studio Ghibli world, an old video of its co-founder Hayao Miyazaki saying AI-generated animation was an "insult to life itself" is going viral.

Edited by: NDTV News Desk | World News | Mar 27, 2025 11:18 am IST

Read Time: 3 mins

Share

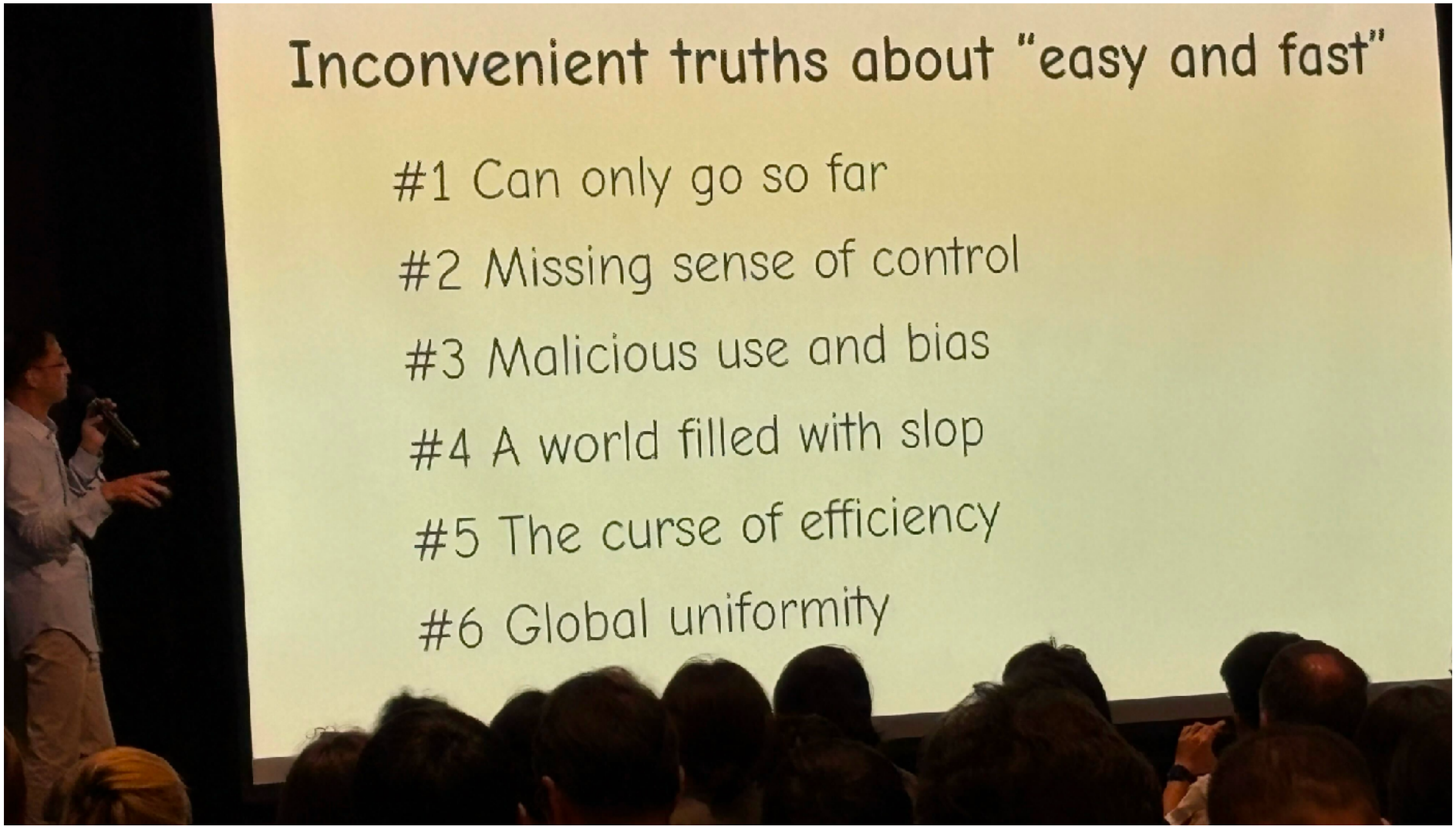
AI slop

Article Talk

From Wikipedia, the free encyclopedia

AI slop (known simply as **slop**) is digital content made with generative artificial intelligence that is lacking in effort, quality, or meaning, and produced in high volume as clickbait to gain advantage in the attention economy, or earn money.[1][4][5][6] It is a form of synthetic media usually linked to the monetization in the creator economy of social media and online advertising.[7] Coined in the 2020s, the term has a pejorative connotation similar to spam.[4] "Slop" was selected as the 2025 Word of the Year by both Merriam-Webster and the American Dialect Society.[8][9]

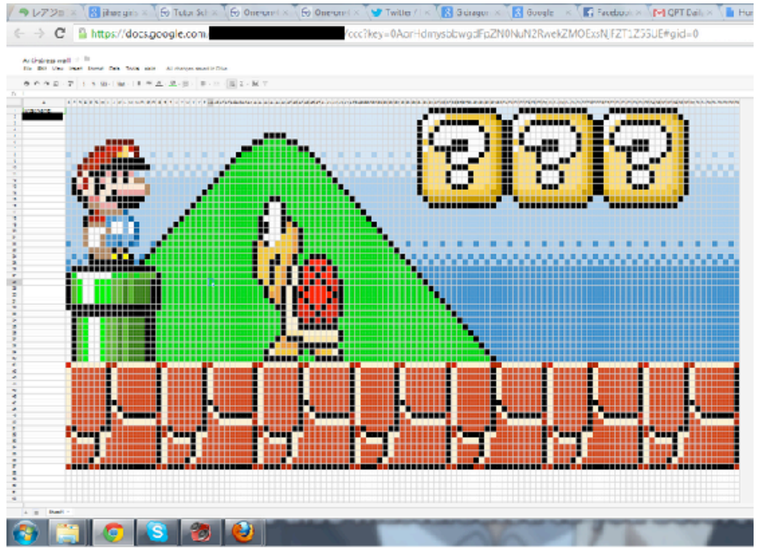
Generative AI is “cheapening” and “sloppifying” artifacts



Takeo Igarashi. Easy and fast? Rethinking the future of content creation tools. UIST 2025 Vision Talk

The case for creative difficulty

- Human creativity is a comment on culture (- AI art and its impact on artists). But making things so fast and easy may take away opportunities for cultural reflection
- Fine artists often find meaning in “going against the grain” and “doing things tools aren’t meant for” or going against norms

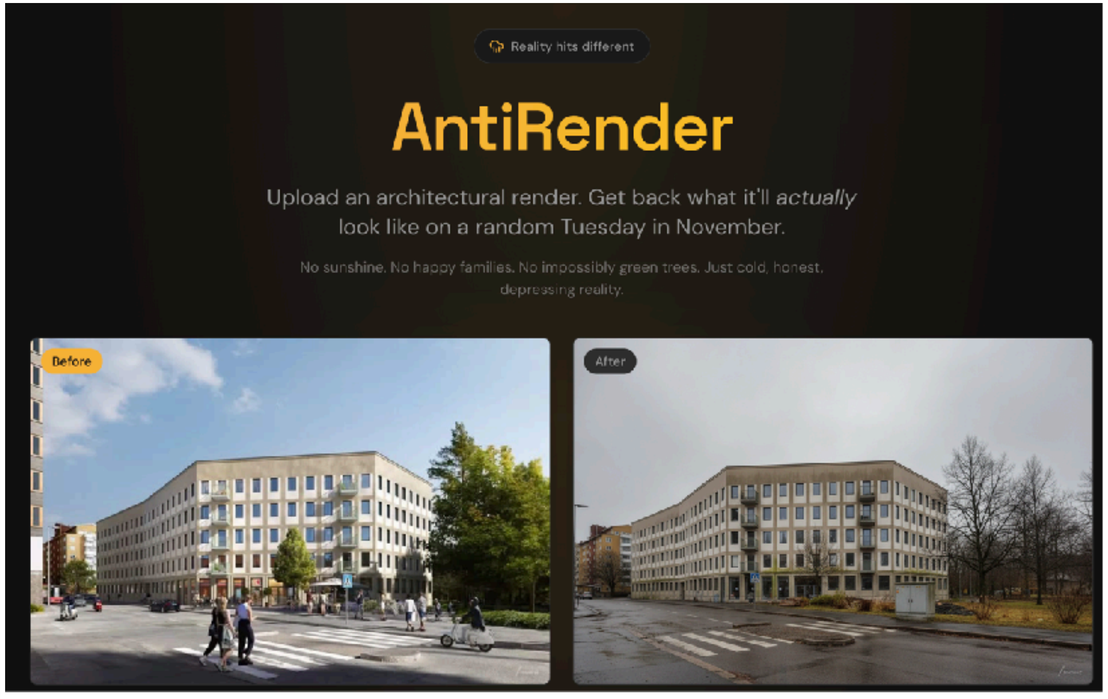


Tatsuo Horiuchi | the 73-year old Excel spreadsheet artist

MAY 28, 2013 / JOHNNY / 36 COMMENTS

"Cherry Blossoms of Historical Castle site" (2006)

"I never used Excel at work but I saw other people making pretty graphs and thought, 'I could probably draw with that,'" says 73-year old Tatsuo Horiuchi. About 13 years ago,

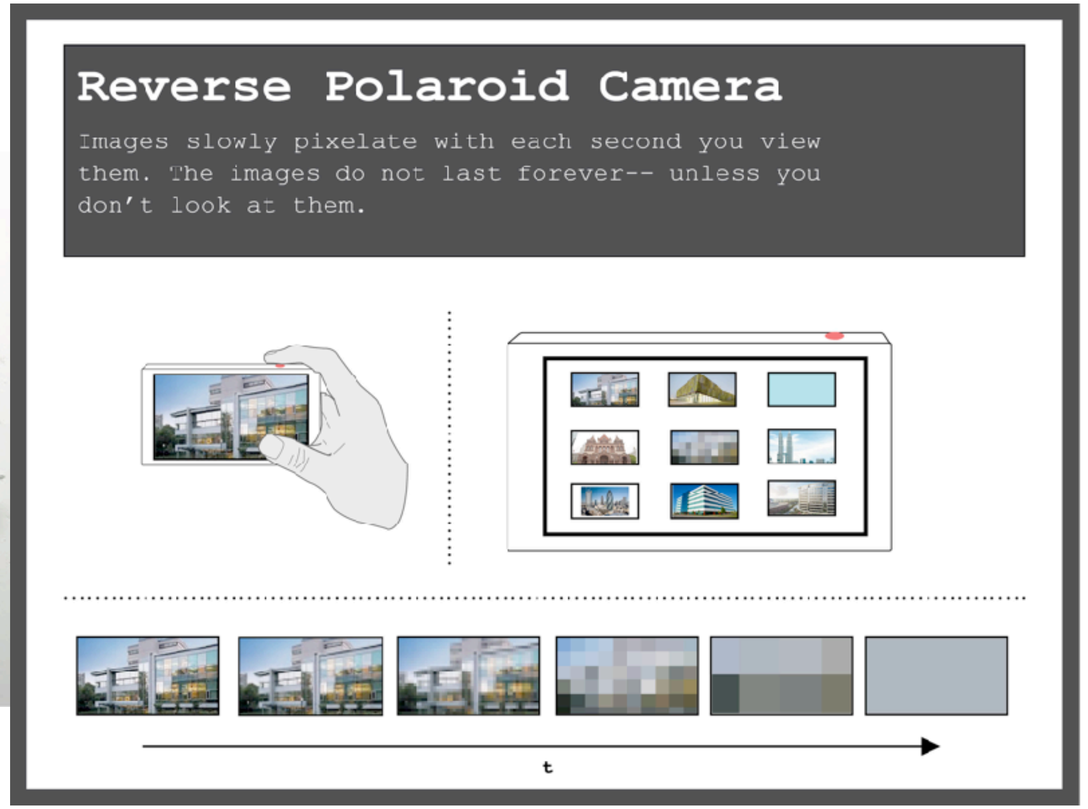


https://antirender.com/ by Magnus Hambleton

Research example: Counter functional devices

This is an example of “*research through design*”

Capsule Camera
As one example, the capsule camera explored a concept of a camera with no viewfinder and a counter that counts up, not down. The owner must decide if and when they want to break the camera apart to retrieve the images.



Making taking photos harder changes your relationship to the practice of photography

https://jamesjpierce.com/projects/project-d

Tinkering

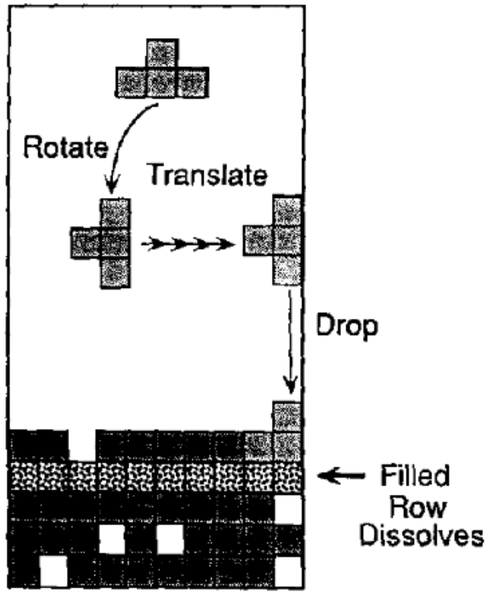
- Tools that create friction allow for *tinkering:* messing around to orient yourself and understand how to use the tool
- As opposed to reading documentation, bottom-up approach of trying random stuff and seeing what sticks
- “Bricoleurs approach problem-solving by entering into a relationship with their work materials that has more the flavor of a conversation than a monologue.”
- Ties into reflection-in-action: as opposed to “engineering” representational knowledge, tinkering is intimate, situated, and “soft” knowledge

https://www.hisour.com/data/bricolage/

https://dixieching.wordpress.com/2009/11/22/the-triumph-of-tinkering-turkle/

Epistemic action

- Pragmatic actions are goal-oriented actions: I make a stroke on the paper because I want to draw something, I drop the Tetris block to complete a row
- Epistemic actions are not goal-oriented actions, but those that help think and make sense of the problem space (e.g., T block rotation)
- Tinkering is a form of doing lots of epistemic actions
- If tools are too easy, there's no need to "figure it out" and take epistemic actions
- Epistemic action is *creative* action (we'll come back to this Monday with creative coding!)



On Distinguishing Epistemic from Pragmatic Action

DAVID KIRSH AND PAUL MAGLIO
University of California, San Diego

https://dl.acm.org/doi/epdf/10.1145/3638380.3638395

Designing for appropriation

Designing for Appropriation

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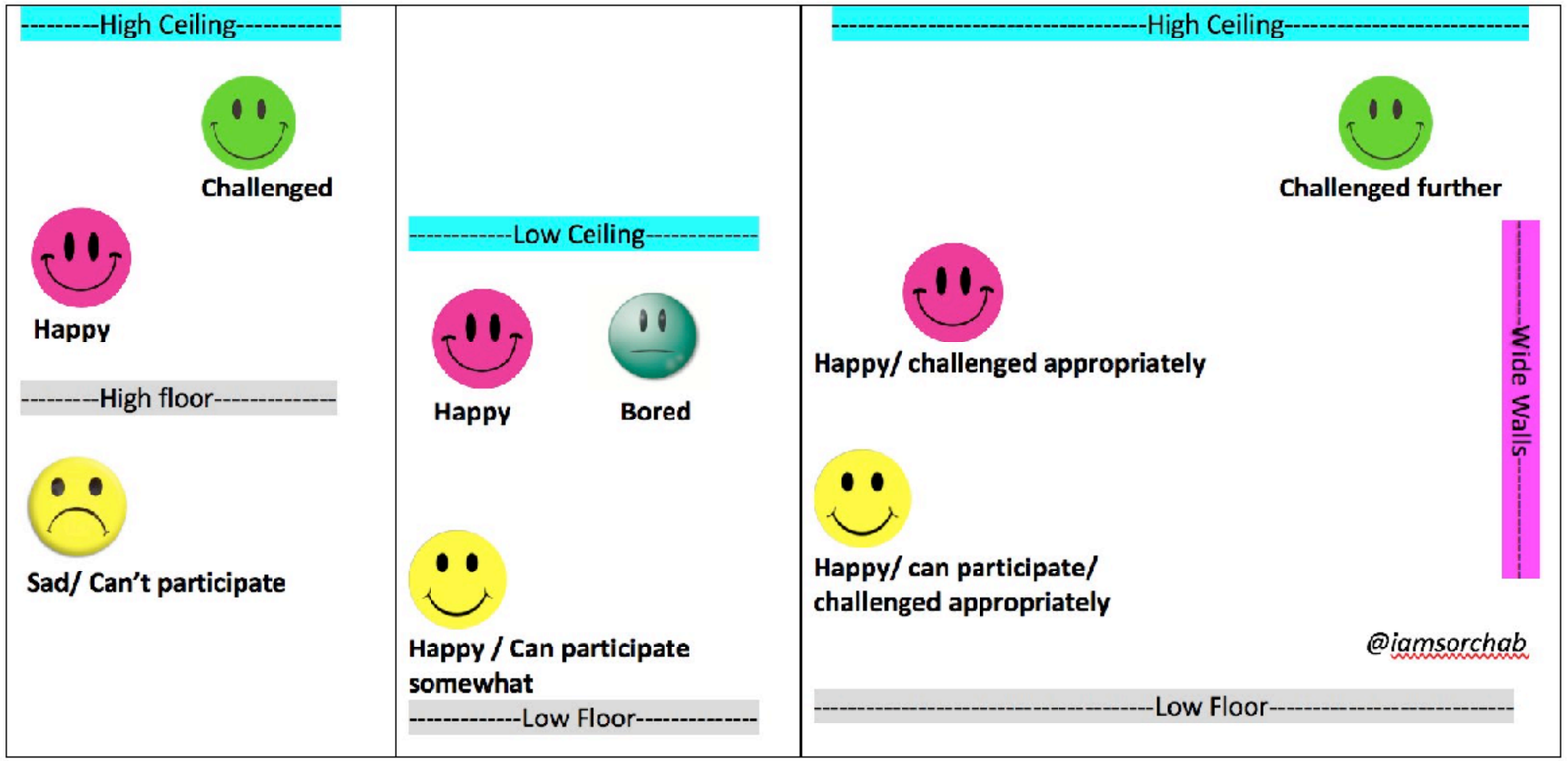
- Paradox: If artists are always trying to use tools in ways they weren't designed for, how can we design good tools if we can't imagine their use cases? How to design for the unexpected?
- Second-order design principles of designing for appropriation with guidelines:
  - allow interpretation (cultural symbols)
  - provide visibility (signal affordances)
  - plugability and configuration (jumping between tools in an ecosystem)

https://alandix.com/academic/papers/HCI2007-appropriation/HCI2007-appropriation-draft.pdf

Low floors, high ceilings, wide walls

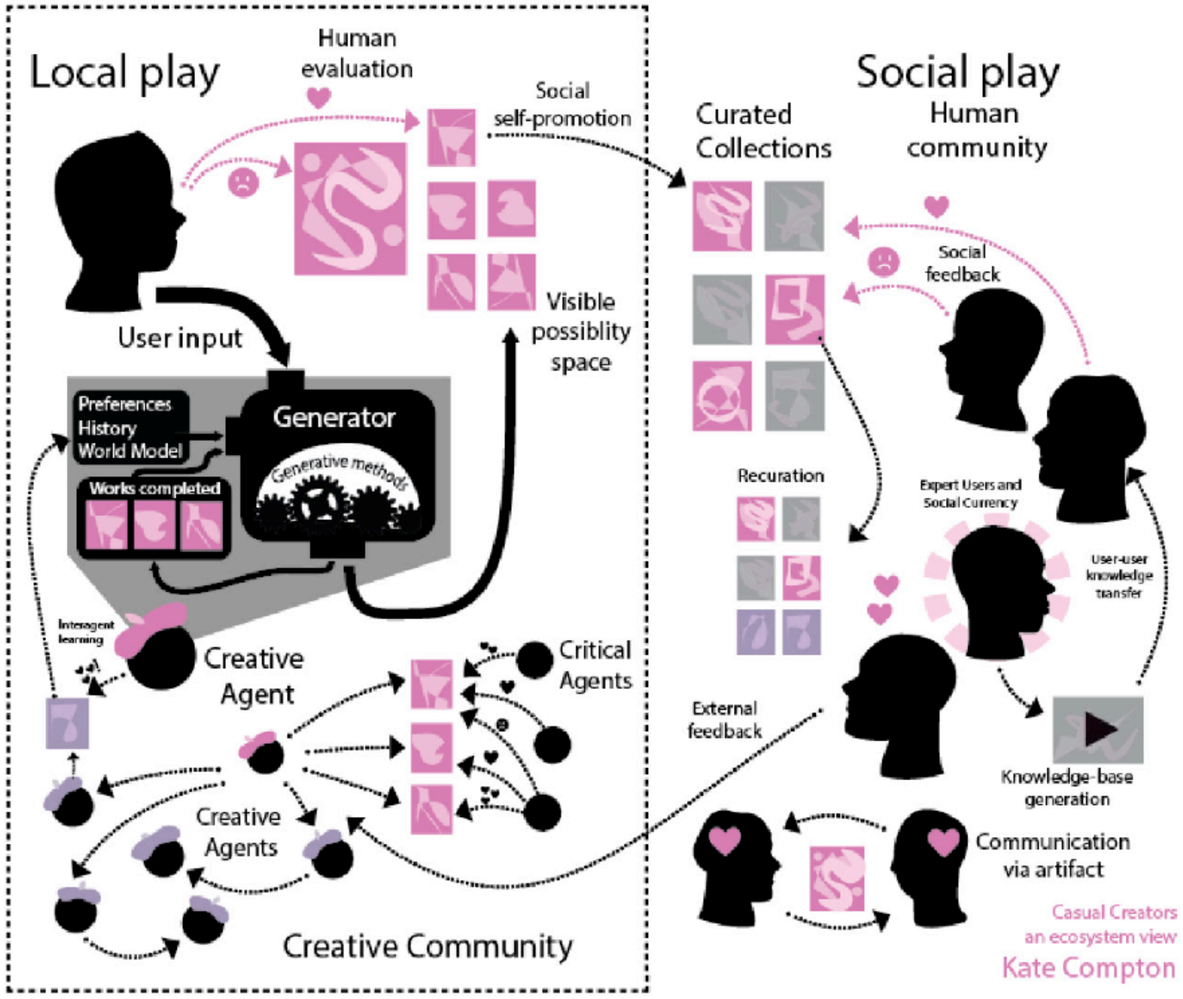


Graphic from https://twitter.com/iamsorchab/status/1322120755296018439

Some Reflections on Designing Construction Kits for Kids. Resnick et al. 2005.

- Floor - barrier for entry
- Ceiling - skill cap, level of sophistication
- Walls - range of exploration and possibility

Casual Creators



Casual creators. Compton 2015.

- “A Casual Creator is an interactive **system** that encourages the fast, confident, and pleasurable exploration of a possibility space, resulting in the creation or discovery of surprising new artifacts that bring feelings pride, ownership, and creativity to the users that make them.”
- Framing as creativity as an **intrinsically pleasurable activity**, rather than an extrinsically motivated way to accomplish tasks - **autotelic creativity**
- Ex: video games like Spore, character creators, Animal Crossing Happy Home Designer

Dialectical activities

Searching for the Non-Consequential: Dialectical Activities in HCI and the Limits of Computers

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Evanston, IL, USA
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- “Dialectical activities are human endeavors in which the value of the activity is intrinsic to itself, including being a good friend or parent, engaging in art-making or music-making, conducting research, and so on.”
- Tension between consequentialist machines (only input -> output processors) supporting dialectic values: computers can’t be the be-all-end-all; computers won’t save us
  - “Continued attempts to treat these dialectical activities as a form of production can lead us astray to overfocus on various forms of attainment, than on promoting deep, **thoughtful engagement in these valuable activities themselves**.”
- Takes an *ecosystem* perspective: we need other humans!

https://dl.acm.org/doi/10.1145/3613904.3641945

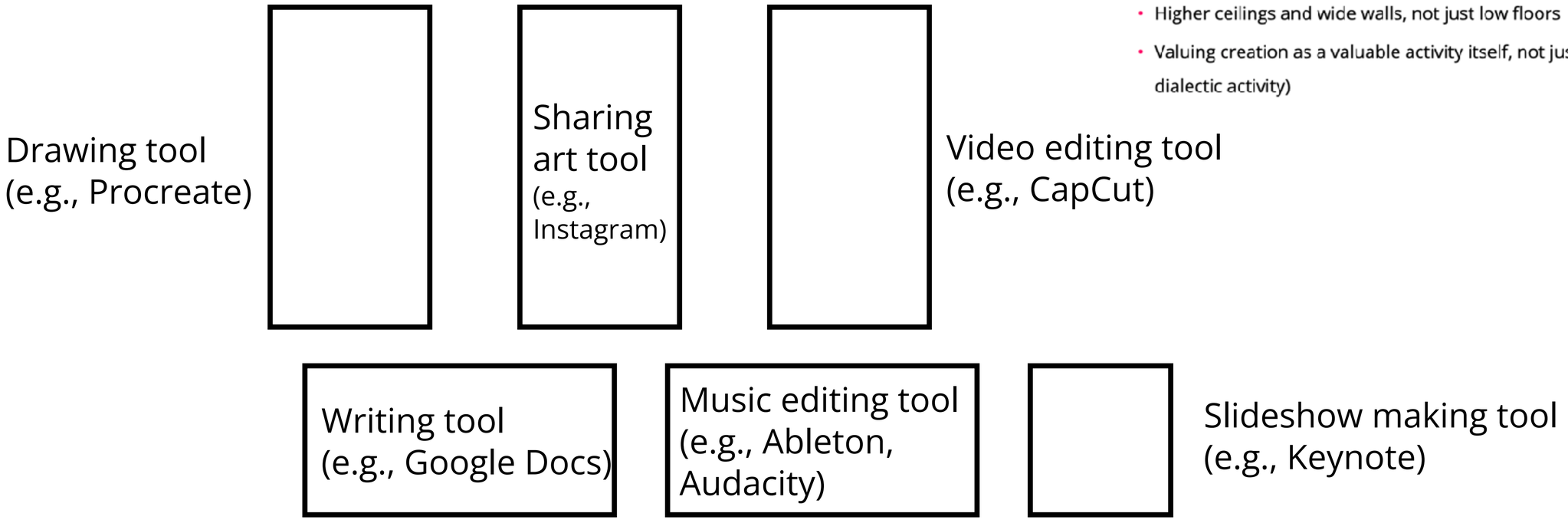
Summary

- Tools that make things easy and fast is one value set
- Another value set is that we should make tools that make things harder, for it could allow…
  - Tinkering
  - Epistemic action
  - Appropriation
  - Higher ceilings and wide walls, not just low floors
  - Valuing creation as a valuable activity itself, not just a means to an end (casual creators, dialectical activities)
- The above are all examples of pieces of HCI theory that motivate and shape how we design technology

Design activity: Make software harder

- Take an existing software domain and, with your group, discuss how you would redesign it to make some task harder.
- What are the creative goals this hardness will support? How can you tie it into the design theory we just learned? (+ friction / disorientation)

- Tinkering
- Epistemic action
- Appropriation
- Higher ceilings and wide walls, not just low floors
- Valuing creation as a valuable activity itself, not just a means to an end
  dialectic activity)



Break/Seminar

Class 8 recap

- TODOs:
  - Monday - **PM3, press fit kit**
    - Sunday 3-5pm mentor sessions @ HMC makerspace
    - ZC from Bryson
    - Optional storyboard for PM4
  - Weds - RRs
    - ZC from Ivyer
    - Dual seminars from Leo & Bailey, Dualeh & Nina