FROM THE HUMAN/MACHINE DICHOTOMY TO DISTRIBUTED CREATIVITY:

THE CASE OF AI INTEGRATION IN FILMMAKING

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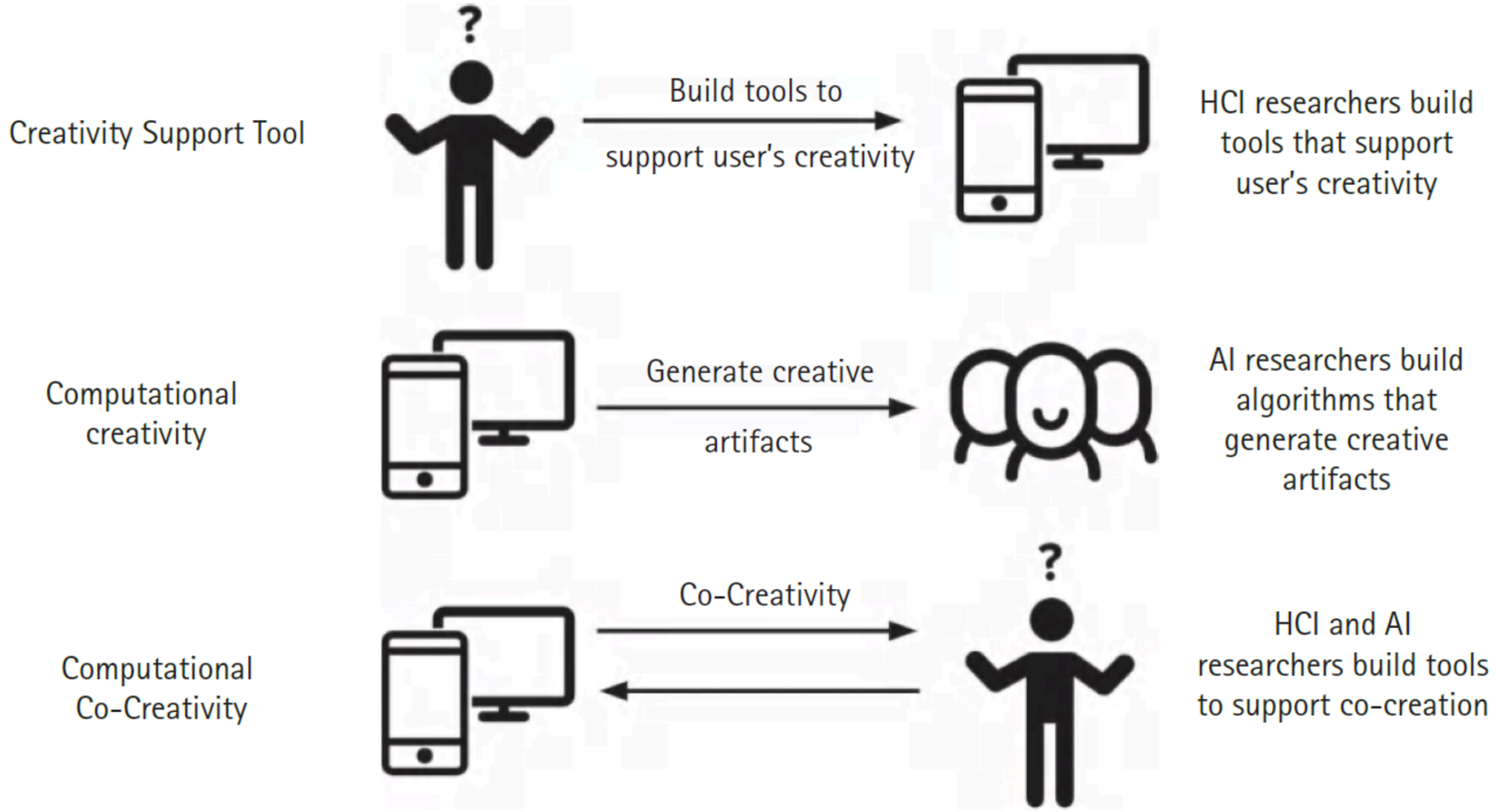
Creativity & AI

Support, creativity & co-creativity



Rafner, Janet. 2025. "Computational Co-Creativity." Pp. 817–45 in The Oxford Handbook of Creativity and Education, edited by J. Katz-Buonincontro and T. Kettler. Oxford University Press.

Computational creativity

- *“the philosophy, science and engineering of computational systems which, by taking on particular responsibilities, exhibit behaviors that unbiased observers would deem to be creative”* (Lamb et al. 2018: 1)

- Double aim: a) design creative systems b) establish framework to evaluate machine creativity

- Notion of creativity based on **4P’s framework** (Producer, Process, Product, and Press) (Jourdanous 2016)

Co-Creativity & AI

- Co-creativity addresses the role of AI in creative processes (Rafner et al. 2023)

- *“A computational co-creative system is a system involving at least one human agent and one artificially intelligent agent, collaborating with each other to build shared creative artifacts”* (Rafner 2025: 821)

- Interactive process between **collaborators** and with the **shared product** (Rezwana & Maher 2022)

Implicit assumptions

- Creativity as a cognitive process done by predefined agents
- Context as a “background” to the creative process of the agents
- Interactions are sufficiently defined by terms that are actually vaguely defined (e.g. collaborations, shared responsibility) (Deshpande & Magerko 2024)
- Exceptionality of AI as an active technology in contrast to other passive tools
- No consideration of the potential controversies over values related to the attribution of creativity

Actor-Network Theory

- ANT as a **methodology** (How to trace associations between actors? *(empirical question)*) (Sayes 2014)
- Agency as **distributed** (Which entities make a difference?) (Latour 2005)
- Shades of **determination/affordances** (How entities are related?)
- **Sociomaterial** processes (Which kind of entities take part in the action?)

Not “what”, but “where” is creativity?

(Celis Bueno et al. 2024)

Distributed Creativity

- Distribution among different actors (division of labour) (Glăveanu 2014)
- Distribution between humans & non-human artifacts (affordances)
- Observed in sociomaterial practices not just in cognitive processes or products
- Creative value is established and attributed through evaluations, that are situated processes (Gallistl 2021)
- There are feedback dynamics between production & evaluation

Filmmaking as a sociomaterial practice

3 Main Phases

- Pre-production (screenwriting, funding, casting, location scouting, costume design, production design and so on...)
- Production (principal photography and all the connected activities; staging, blocking...)
- Post-production (editing, scoring, dubbing, sound effects, sound design, color grading, subtitling, special effects, CGI and so on...)

Sociomaterial aspects

- Craftsmanship skills can make a difference
- Aesthetics is a consequence of technical choices
- Feedback processes through the different phases (e.g.: editing may influence shooting)
- Technologies can at the same time enhance and constrain the practices of filmmaking
- One has to master the technologies and appreciate how they may serve the cinematic language in order to make the best of them
- Technological innovations reshape practices

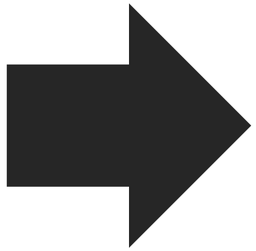
Technological revolutions

- Synchronized sound (dialogues recorded on set, dubbing, consequent new forms of acting,...)
- Colour (more attention to dresses and backgrounds, different lighting techniques,...)
- Digital (more control on the final image, more power to post-production, more flexible instruments on set,...)

Example

- Digital cameras can be lighter and smaller than old 35mm film cameras

- Digital memories are cheaper and last longer than film



- Nowadays it is easier to shoot:

1. long takes
2. many takes
3. handheld shots

The integration of AI in filmmaking

Current narratives/expectations

- AI generated images and sounds might replace the entire production process

Practical limits in implementation

- There is little control on the outcomes of Gen AI videos
- Gen AI products typically require a lot of trial and error attempts
- Training may be limited due to copyright

AI Filmmaking Techniques Taxonomy

1) Asset enhancement
Techniques that unlock unusable audiovisual assets

2) Asset editing
Techniques that allow for new changes to assets

3) Asset generation
Techniques that generate new assets ex nihilo

Asset enhancement

Upscaling

Upscaling

AI advantages:

- No more need for long lenses to get extreme close-ups
- No need for careful framing

Asset editing

In-painting

In-painting

Pre-AI limitations:

- Not all shooting locations can be rearranged for filming (i.e. road signs)

AI Solution:

- Use in-painting for removing/editing objects in frame and avoid demanding VFX!

Asset editing

Out-painting

Out-painting

Pre-AI limitations:

- Building big sets is expensive and challenging.

AI Solution:

- Use out-painting for generative set extensions!

Asset generation

Generative Stock Footage

Generative Stock Footage

Pre-AI limitations:

Some single use shots are almost if not completely impossible to obtain.

AI Solution:

Use video generation models!

Key takeaways

- Creativity shall be considered as a distributed process
- Technologies enable technical choices that shape aesthetics
- AI systems should be critically integrated in pre-existing practices

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THANK YOU

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