

CREATIVITY SUPPORT

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Since around the turn of the century, when books on the topic started to appear, the interest in building computer system to support human creativity has been strong (Card et. al. 1999; Shneiderman 2002). By 2005, the NSF funded an international workshop on the subject (Shneiderman et. al. 2005). The topic is now well founded but, in the early days of human-computer interaction (HCI), the interest was more in helping the user's productivity than enhancing their creativity (Edmonds 2018: 11-12). In what follows, I briefly review the earlier history of the design of human-computer systems for the support of creativity.

It seems obvious that the support of children's creativity was on the mind of Alan Kay when he wrote his note about a computer for children ("of all ages") (Kay 1972). Around that time, I had also started my quest to explore the implications of computing for human creativity but starting, in my case, with artists and designers. In a 1970 paper Stroud Cornock and I said that:

"The advent of computing stimulates a desire to re-examine the subject of creativity... *the artist using the computer to become ... a catalyst of creative activity*" (Cornock and Edmonds 1970).

From that time, there was considerable work in the general area of creativity but explicit calls for creativity support were rare. In 1986 John Seeley Brown gave a presentation at the ACM CSCW conference called "Enhancing Creativity with Collaborative Tools". In the published abstract he called for:

"tools that help pull our thoughts from chaos to order and that enable us, collaborating with ourselves or others, to suspend judgment and let each idea be a trigger and a backdrop for the next idea." (Brown 1986).

This was certainly advocating creativity support tools.

Around this time there was a flurry of interest in creativity among the Artificial Intelligence community. Mostly, that interest was in modelling creativity, but a few people from the HCI community contributed by advocating research into creativity support, rather than into building automatic creative systems.

In 1988, the first *Computational Models of Creative Design* meeting was held on Heron Island, Australia. Revised papers were later published in a book (Gero and Maher 1993). My paper was titled "Knowledge-Based Systems for Creativity" (Edmonds 1993). The key claim was that knowledge-based systems offered new mechanisms for the support of human creativity. Gerhard Fischer and Robert Coyne with Eswaran Subaran also advocated the study and development of creativity support systems (Fischer 1993; Coyne and Subaran 1993).

In 1991 a *Symposium on AI, Reasoning and Creativity* was held, also in Queensland Australia (Dartnall 1991). Linda Candy contributed a paper on *Amplifying Creativity* (Candy and Edmonds 1991) and, in my paper, I discussed interactive systems that can enhance creativity (Edmonds 1991). These papers were later revised into a book (Dartnall 1994) in which I introduced a section, "Computer-based Systems that Support Creativity". This gave an overview of creativity support and pointed the way to future research.

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By 1990, an interest in creativity support began to appear at CHI when Thecla Schiphorst and colleagues presented a paper on “Tools for Interaction with the Creative Process of Composition” (Schiphorst et. Al. 1990). Then in 1993 the *Creativity and Cognition* series began, becoming a SIGCHI conference by 1999. As the introduction to the second of these conferences put it:

“The design of creativity supporting systems is now fully on the research agenda.” (Candy and Edmonds 1996).

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