Social Creativity

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What is Creativity?

How do we decide what is creative?
What is the difference between creative and innovative?

Who can decide what is creative?
Can the creator decide that what they do is creative?

How do we decide if a computer is creative?
What would the test be for computational creativity?
Creativity

Creativity is the ability to produce work that is both novel and appropriate.
(Sternberg and Lubart, 1999)

What does it mean for something to be novel?
What does it mean for something to be appropriate?
Who can decide what “novel and appropriate mean?”
Boden’s Creativity

Margaret Boden proposed that creativity can be broken down into two concepts:

Psychological Creativity (P-Creativity)
   P-Creativity is when a person creates something that they’ve never created before.

Historical Creativity (H-Creativity)
   H-Creativity is when a person creates something that no-one has ever created before.
Gardner’s Creativity

Howard Gardner proposed a similar way to break down creativity into two types:

**Small-c creativity**
Small-C creativity is the type of everyday creativity that we all have to do to solve problems or produce work.

**Big-C Creativity**
Big-C Creativity is the type of creativity that changes society through the impact of some work on others.
Creative Systems

Mihaly Csikszentmihalyi argues that creativity cannot be defined in isolation to society and culture

Society and culture play an essential role in the production and evaluation of creative works

Creative processes are in the interactions between individual, society and culture

The society and culture associated with a creative practice are called the field and domain
DIFI Model of Creativity

DIFI = Domain Individual Field Interaction
Computational Creativity

How does a better understanding of social creativity help us develop creative systems?

Can we develop computer models of social creativity?  
What could models tell us about human creativity?

Can we develop creative tools using artificial societies?  
What advantages do artificial creative societies have?

Can we combine human and artificial creative societies?  
Can humans and computers collaborate socially?
Modelling Social Creativity

A computational model of social creativity needs to capture how individuals interact.

The simplest computational model of individual creativity is the generate-and-test model.

Liu extended this simple model to social creativity with the dual generate-and-test model.
Individual Generate-and-Test
Socio-Cultural Generate-and-Test

FIELD
- socio-cultural
- creativity testing

INDIVIDUAL
- socio-cultural
- product generation

DOMAIN
- problems
- & solutions

Diagram flow:
- Yes from FIELD to DOMAIN
- No from FIELD to INDIVIDUAL

Dual Generate-and-Test
Modelling Emergence

Diagram showing the relationship between macro-dimensional and micro-dimensional aspects leading to creative design outcomes. Arrows indicate the process of synthesising and studying behaviour, and the exploration of insights from research literature to model these behaviours.
Artificial Creativity

Rules for creating artificial creativity:

- The model contains a society of agents situated in a cultural environment
- There is no agent that can direct the behaviour of all of the other agents
- There are no rules in the agents or the environment that dictate global behaviour
- Agents interact with other agents to exchange artefacts and evaluations
- Agents interact with the environment to access cultural symbols
- Agents evaluate the creativity of artefacts and other agents
Inter-Individual Interactions

**INDIVIDUAL B**

- problem finding
- product generation
- creativity test

**INDIVIDUAL A**

- problem finding
- product generation
- creativity test

Creativity evaluation

Creative product

Potentially creative product

Yes

No
Artificial Creative Societies

FIELD

- individual
  - individual
    - individual
      - individual
        - individual
          - individual

DOMAIN

creative products
Digital Clockwork Muse

The Law of Novelty

Clique Formation

Inter-Clique Communication
Modelling Socially Creative Design

Modelling Socially Creative Design

Gate-keeping Effects

Repository size Y vs Tie strength T
Socially Creative Design Tools

How can we use artificial creative societies to support human creativity?

How can artificial creative societies be used to create works automatically?

How can artificial creative societies be used to create works with humans?
The Intelligent Logo Project for Tribal DDB