

Observing Collective Thought: Developing social media tools for real time awareness of social preoccupations

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Collective consciousness. Social Media. Big data. Knowledge systems and thought. Generative digital art.

1. INTRODUCTION

The design of technological systems is necessarily influenced by the patterns of activity and capability of the human organism, the physical and mental modes of activity and operation with which we sense and affect the world¹. Taking this premise as a starting point, the research project presented at EVA 2016 seeks to reverse this relationship and, by examining the products of mass, digital activity, to discover something about the thinking of mass human community using digital technology.

2. DIGITAL MEDIA AND MASS THOUGHT

Digital and media technology have been related to human thought processes since before media became digital; Vannevar Bush proposed the *Memex* to enhance human thought in 1945 (Bush 1945) and Alan Turing in his 1950 paper, *Computing Machinery and Intelligence* (Turing 1950), explored the nature and differences between the algorithmic processes underlying computer operation and those of human intelligence. Both of these core texts are joined by much subsequent work in assuming that there is an underlying structural relationship between the operation of digital computation and human thought; one could characterise continuing debates

¹ This relationship between the human the machine persists whether one takes a McLuhanesque view of the potential effects of technology on humanity or the darker vision of Foucault. The adaption of technology to 'fit' is necessary for either liberation or control.

as being between views of this relationship as being one of prosthetic accommodation or (increasingly close) mimicry.

Human thought processes are complex and have been represented in a large number of often complex models. Two features however are widely shared, a mechanism to deal with decoding and responding appropriately to external stimuli and a way for experience of the world to be collected and related to previous experiences (learnt) to form a dynamic associative model (Anderson 1976). Since digital tools can be seen to have a relationship to the human thought processes providing their inputs and informing their structures, the current work seeks to make the two essential features of human thought, connections and responses to stimuli, visible through operations on the mass of real-time data produced by social media and search systems.

3. RESPONSES AND CONNECTIONS IN SOCIAL MEDIA DATA

The current project draws upon two datasets; Twitter, when it uses a keyword search operating on recent tweets to find text fragments incorporating a given term (Figure 1) and a bespoke implementation of the undocumented Google search auto-complete API, to report currently popular linear connections between short text fragments (Figure 2).

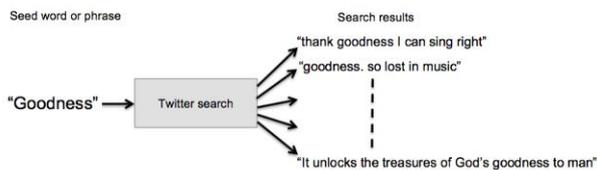


Figure 1: Twitter Search component

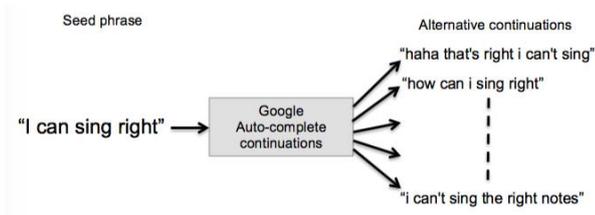


Figure 2: Google auto-complete continuation component

These massive, dynamic, data-sets are used in an algorithmic iterative cycle to reveal the current characteristics of an averaged set of thought patterns (in a similar way that averaged visual portraits and other characteristics can be constructed from large sets of image material²). This is not Lévy's *Collective Intelligence* (Lévy 1999), or a Jungian collective unconscious, but is a reflection of collective thought; the ways humans are thinking at any given instant. The creative challenge posed is how can one mimic the operation of augmented reality systems and overlay the physical world with a real-time visualisation of the world of thought?

4. VISUALISATION AND NARRATIVES

The Twitter search and Auto-complete continuation components are incorporated in an iterative generative system which produces an emerging series of bifurcating text-based narratives which set out to reveal moment by moment, the changing dominant patterns of stimulus-response and conceptual connectivity of the digital collective. Filtering and branch-culling functions maintain basic sense and a manageable number of alternative parallel strands. The final version will use a large-scale projection system to display the evolving strands of narrative across a large space.

5. REFERENCES

- Anderson, J. R. (1976) *Language, Memory, and Thought*. Psychology Press.
- Bush, V. (1945) As We May Think. *The Atlantic Monthly*, July.
- Lévy, P. (1999) *Collective Intelligence*. Mankind's Emerging World in Cyberspace. Cambridge, Massachusetts: Perseus Books.
- Turing, A. (1950) Computing Machinery and Intelligence. *Mind*, 49(236), pp. 433–460.

² For example the recent work of Lev Manovitch and his team – see <http://selfiecity.net>