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Dr. Victor Henning
Co-Founder & CEO
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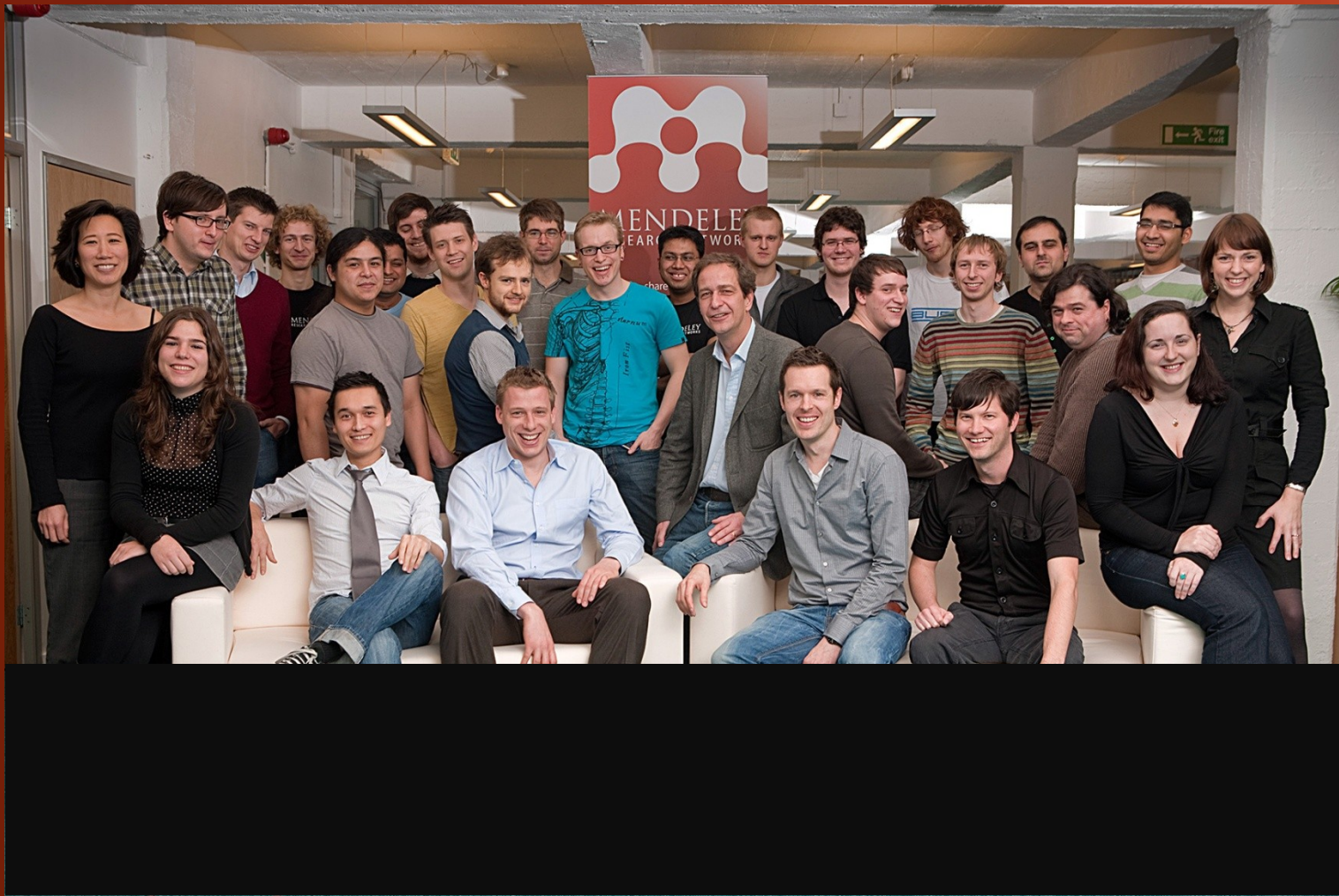


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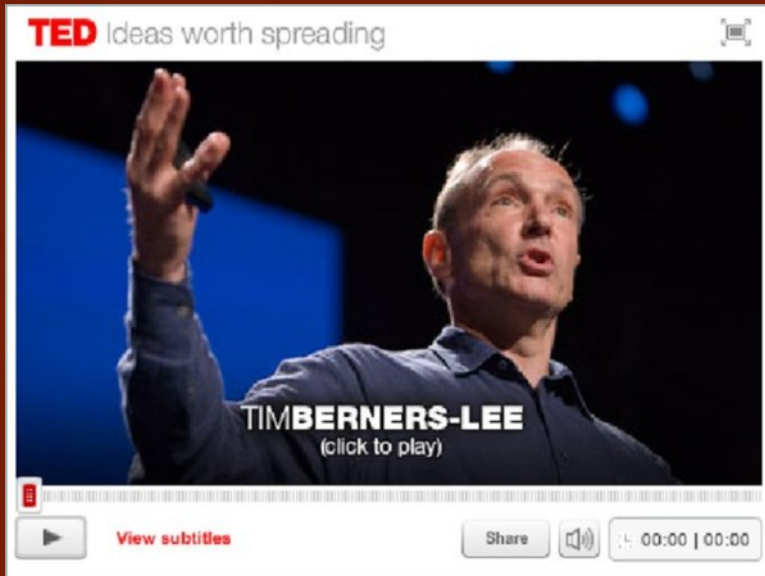


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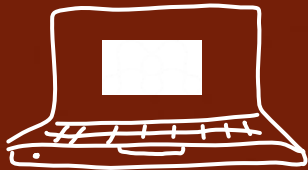


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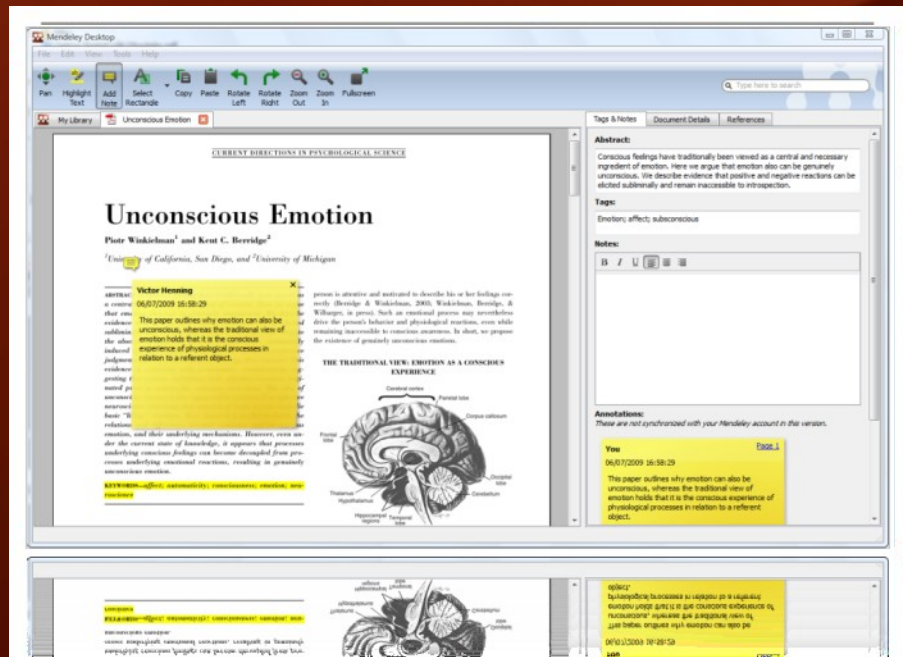




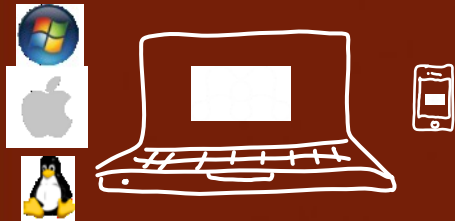
But a lot of the state of knowledge of the human race is sitting in the scientists' computers and is – currently not shared. We need to get it unlocked so we can tackle those huge problems.



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Recommended articles

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Neural correlates of behavioral preference for culturally familiar drinks. ✕

Samuel M McClure, Jian Li, Damon Tomlin, Kim S Cypert, Latané M Montague, P Read Montague in *Neuron* (2004)

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Incorporating contextual information in recommender systems using a multidimensional approach ✕

Gediminas Adomavicius, Ramesh Sankaranarayanan, Shahana Sen, Alexander Tuzhilin in *ACM Transactions on Information Systems* (2005)

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Constructive Consumer Choice Processes ✕

James R Bettman, Mary Frances Luce, John W Payne in *Journal of Consumer Research* (1998)

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Neuron, Vol. 44, 379–387, October 14, 2004, Copyright ©2004 by Cell Press

Neural Correlates of Behavioral Preference for Culturally Familiar Drinks

Samuel M. McClure,^{1,2} Jian Li,¹ Damon Tomlin,
Kim S. Cypert, Latané M. Montague,
and P. Read Montague*
Department of Neuroscience
Menninger Department of Psychiatry
and Behavioral Sciences
Baylor College of Medicine
1 Baylor Plaza
Houston, Texas 77030

Summary

Coca-Cola® (Coke®) and Pepsi® are nearly identical in chemical composition, yet humans routinely display strong subjective preferences for one or the other. This simple observation raises the important question of how cultural messages combine with content to shape our perceptions; even to the point of modifying behavioral preferences for a primary reward like a sugared drink. We delivered Coke and Pepsi to human subjects in behavioral taste tests and also in passive experiments carried out during functional magnetic resonance imaging (fMRI). Two conditions were examined: (1) anonymous delivery of Coke and Pepsi and (2) brand-cued delivery of Coke and Pepsi. For the anonymous task, we report a consistent neural response in the ventromedial prefrontal cortex that correlated with subjects' behavioral preferences for these beverages. In the brand-cued experiment, brand knowledge for one of the drinks had a dramatic influence on expressed behavioral preferences and on the measured brain responses.

Introduction

Perceptual constructs are generally multidimensional, integrating multiple physical and cognitive dimensions to generate coherent behavioral preferences. In sensory processing, the idea of multidimensional integration has long been used to frame a range of questions about cross-modal interactions in physiological and behavioral responses (Stein et al., 1996; 1999; Wallace and Stein, 1997; Armony and Dolan, 2001; Dolan et al., 2001; Laurienti et al., 2002, 2003). This same multidimensional perspective has also been developed for olfactory and gustatory processing, where the detection, discrimination, and perceived intensity of stimuli are not only functions of the primary physical properties (odors, flavors) but are also modulated "cross-modally" by visual input (Gottfried and Dolan, 2003), auditory input, and current

neural responses, and the modulation of both by non-odor or nonflavor stimuli—that is, the sensory problem. Ultimately, such sensory discriminations and the variables that influence them serve to influence expressed behavioral preferences. Hence, there is another large piece of the problem to understand. For modern humans, behavioral preferences for food and beverages are potentially modulated by an enormous number of sensory variables, hedonic states, expectations, semantic priming, and social context. This assertion can be illustrated with a quote from Anderson and Sobel (2003) profiling the work of Small et al. (2003) on taste intensity and pleasantness processing:

"A salad of perfectly grilled woody-flavored calamari paired with subtly bitter pale green leaves of curly endive and succulent petals of tomato flesh in a deep, rich balsamic dressing. Delicate slices of pan-roasted duck breast saturated with an assertive, tart-sweet tamarind-infused marinade."

The text goes on further, but note that the sheer lushness of the description adds somehow to the appeal of the food described. Also notice one implicit point of the description: many levels of social, cognitive, and cultural influences combine to produce behavioral preferences for food and drink. The above description likely would not appeal to a strict vegan or an owner of a pet duck. Anderson and Sobel point out that the preferences indexed by their prose originated from the economic demands on our early forebears and were unlikely to have been strictly about aesthetic responses to food and drink.

However, the modern problem is different. Cultural influences on our behavioral preferences for food and drink are now intertwined with the biological expediency that shaped the early version of the underlying preference mechanisms. In many cases, cultural influences dominate what we eat and drink. Behavioral evidence suggests that cultural messages can insinuate themselves into the decision-making processes that yield preferences for one consumable or another. Consequently, the appeal or repulsion of culturally relevant sights, sounds, and their associated memories all contribute to the modern construction of food and drink preferences. The neural substrates underlying food and drink preferences and their influence by cultural images have not been explored. As alluded to above, the majority of work on olfaction and gustation has focused on sensory processing. In this paper, we combine simple taste tests and event-related functional magnetic resonance imaging (fMRI) to probe the neural responses that

Related research

Uncovering "Theories-in-use": Building Luxury Wine Brands

M Beverland in *European Journal of Marketing* (2004)

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- 29% United States
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- 11% United Kingdom

Groups



Memory systems

Tags

[brand](#) [neuroscience](#)

motivation

Tag summary

Motivation is the driving force by which we achieve our goals, and is said to be intrinsic or extrinsic. The term is generally used to describe human behavior, but can refer to the causes of animal behavior as well. According to various theories, motivation may be rooted in a basic need to minimize physical pain and maximize pleasure, or it may include specific needs such as eating and resting, or a desired object, goal, state of being, ideal, or it may be attributed to less-apparent reasons such as altruism, selfishness, morality, or avoiding mortality. The most well-known theories of motivation include [Maslow's hierarchy of needs](#), [Herzberg's Motivation-Hygiene theory](#), [Alderfer's ERG theory](#), [Deci and Ryan's self-determination theory](#), and [Vroom's expectancy theory](#).

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Persuasive Technology

In this group we gather information about the field of persuasive technology (aka. captology), and discuss our findings. The term 'captology' was...

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Popular papers

How to build a motivated research group.

Uri Alon in *Molecular Cell* (2010)

Motivated group members experience a full sense of choice: of doing what one wants. Such behavior shows high performance, is enjoyable, and enhances innovation. This essay describes principles of building a motivated research group.

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Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being.

R M Ryan, E L Deci in *American Psychologist* (2000)

Human beings can be proactive and engaged or, alternatively, passive and alienated, largely as a function of the social conditions in which they develop and function. Accordingly, research guided by self-determination theory has focused on the...

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A Theory of Human Motivation

A H Maslow in *Psychological Review* (1943)

This paper develops a theory of social norms: what they are, how they form, and how they change. The theory also makes predictions about group formation, categorization, and discrimination, and it can be extended to model leadership and fairness....

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Persuasive Technology

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**kristina Curtis**

is anyone familiar with the work of Jakob Nielsen? How does he compare to BJ Fogg? Apparently we should not be put off by the website..

24th May

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24th May

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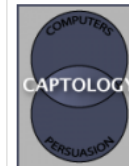
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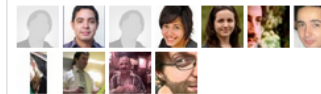
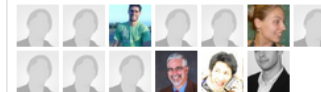
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**Lennart Olsen**

About this group



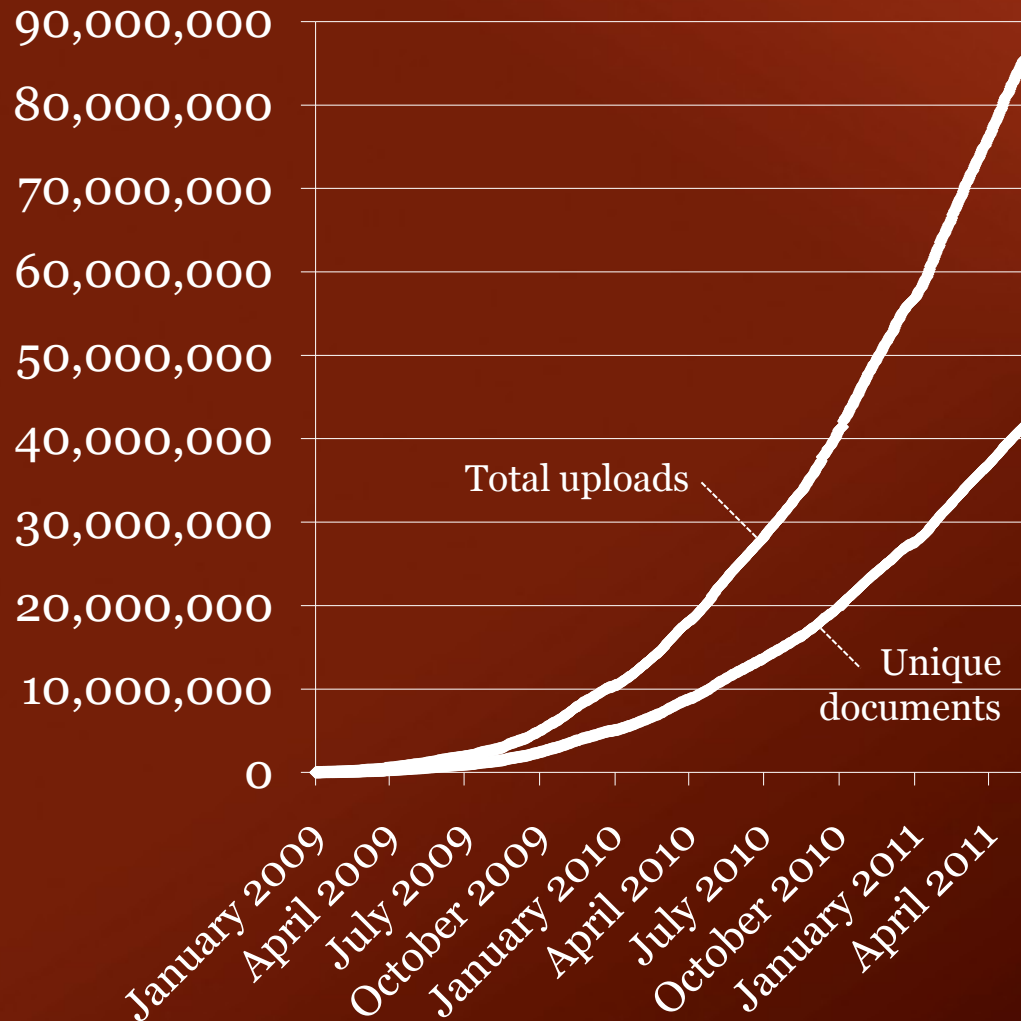
In this group we gather information about the field of persuasive technology (aka. captology), and discuss our findings. The term 'captology' was coined by BJ Fogg, and the field is well described in his article "Persuasive computers: perspectives and research directions," Proceedings of the SIGCHI conference on Human factors in computing systems - CHI '98, 1998, pp. 225-232. The majority of the articles should be from the HCI perspective.

Owned by **Lennart Olsen**
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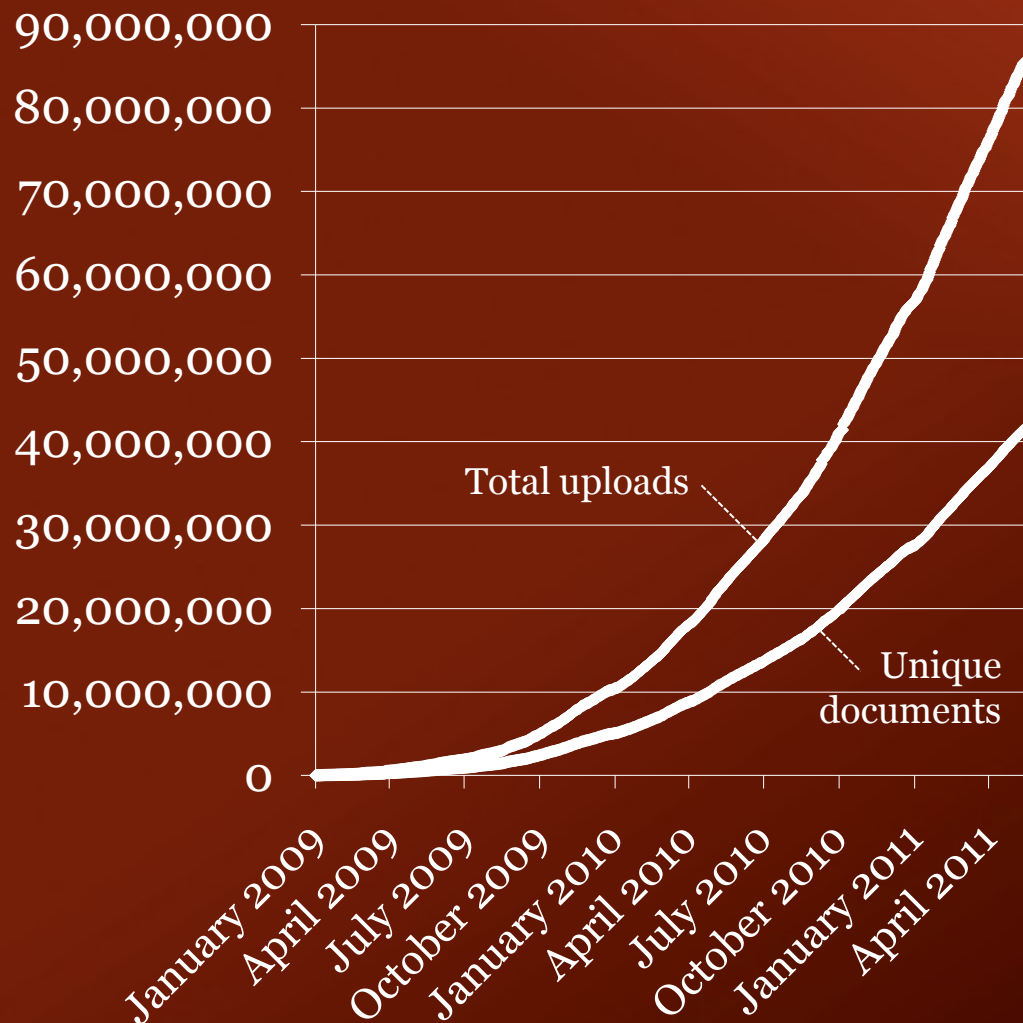
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Register your application online, and start building and testing it.
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Join the community discussions, ask questions, and get help.

Mendeley has recently released its Open API! [Register an application](#) to start building things.

See what people have made

Check out a few of our favorites.

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DUNCAN J WATTS

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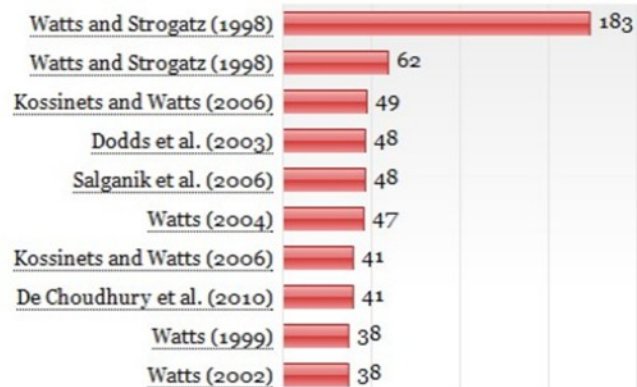
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Duncan J Watts's alternate spellings

Duncan J. WATTS

Search

DUNCAN J WATTS

183 Collective dynamics of 'small-world' networks.

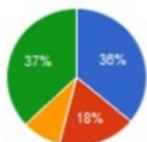
Duncan J WATTS Steven H STROGATZ

Nature (393) Nature Publishing Group, 1998

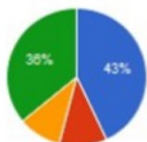
PMID: 9623998 ISBN: 9780691113579 DOI: 10.1038/30918

Networks of coupled dynamical systems have been used to model biological oscillators, Josephson junction arrays, excitable media, neural networks, spatial games, genetic control networks and many other self-organizing systems. Ordinarily, the connection topology is assumed to be either completely regular or completely random. But many biological, technological and social networks lie somewhere between these two extremes. Here we explore simple models of networks that can be tuned through this middle ground: regular networks 'rewired' to introduce increasing amounts of disorder. We find that these systems can be highly clustered, like regular lattices, yet have small characteristic path lengths, like random graphs. We call them 'small-world' networks, by analogy with the small-world phenomenon (popularly known as six degrees of separation). The neural network of the worm *Caenorhabditis elegans*, the power grid of the western United States, and the collaboration graph of film actors are shown to be small-world networks. Models of dynamical systems with small-world coupling display enhanced signal-propagation speed, computational power, and synchronizability. In particular, infectious diseases spread more easily in small-world networks than in regular lattices.

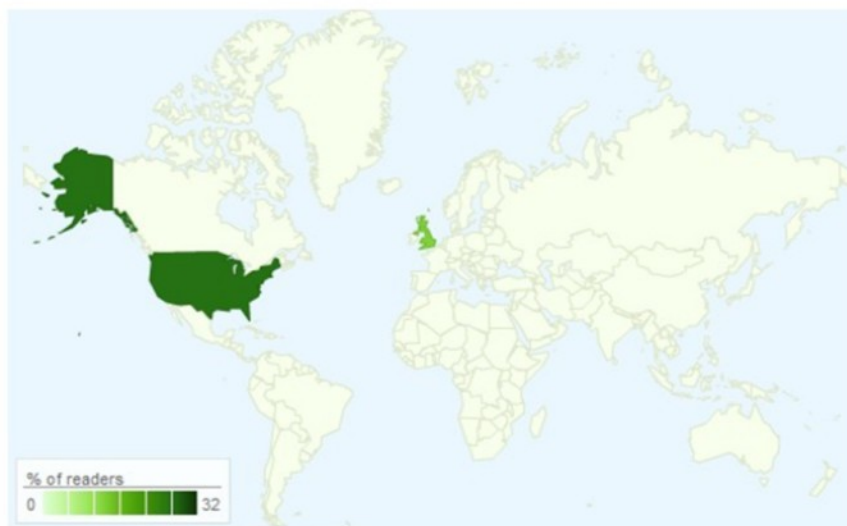
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Extensions

Store

Groups

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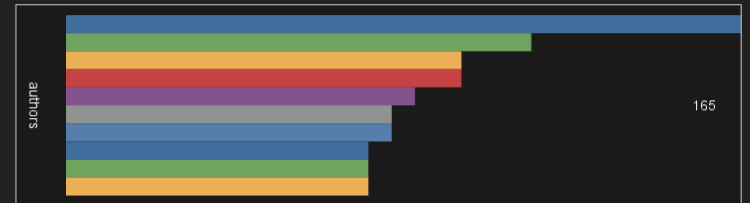
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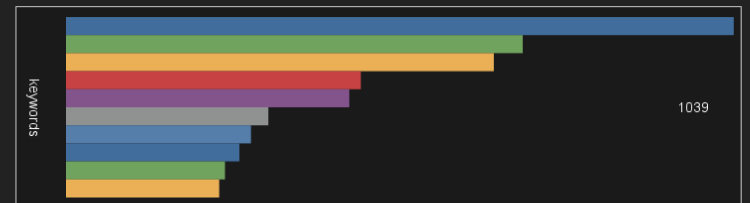
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