

Something Is Wrong with Us

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Abstract. This paper describes the design and development of the interactive data visualization application *Something is Wrong with Us*. We discuss the experiential theory of Phenomenology as expressed through data aggregation and transmission. We analyze data visualization design as a process to express emotive data networks via sentiment analysis and what we term as "Density Effect." We conclude our analysis with a discussion on the value of emotive data visualization and discuss future developments of the application.

Keywords: Data visualization, wrongness, narrative, networks, experiential design, user interface design, sentiment analysis.

1 Introduction

"She's still not talking to me, what's wrong?"

- Anonymous blog post, 11/27/2011

"I feel like the wrong person will catch on to the fact that I'm living in my van and that could be dangerous."

- Anonymous blog post, 11/26/2011

"I feel like I'm actually on the wrong planet, and it's great when I'm in my garden but the minute I go out the gate I think: what the hell am I doing here?"

- Anonymous blog post, 11/26/2011

As we explore the existential concepts that mark the human experience, the question is not necessarily "what is the nature of our existence?" but rather, "who is asking the questions?" At the core of this inquiry resides the phenomenon known as *experience*, an innately personal process that colors our explorations of existential matters.

Throughout history, philosophers, social scientists, theorists, and artists have endeavored to define commonalities in the human experience, searching for communal and representational descriptions of subjective matters. This adherence to experiential categorizations is a distinguishing mark of the human condition. Our diverse experiences lead us to have certain presuppositions regarding how others will interpret our actions. These assumptions typically manifest themselves as binary roles: good vs. bad, right vs. wrong, etc. Examples of these comparative relationships are rampant

within the World Wide Web. The internet is replete with users positing, asserting, decrying and pronouncing their beliefs under the scope of these binary relationships. *Something is Wrong with Us* is an application that explores this data, aggregating it based solely upon the concept of what internet users feel is “wrong.” In approaching our analysis we chose to create an interactive data visualization to display a communal narrative of wrongness.

2 Visualizing Data

One method of gathering, analyzing, abstracting and displaying data is through Data Visualization. From the RSS news crawler of 10x10 [1] to the colorful nodes of websites as graphs [2] to the blue domes of the shape of a song [3], data visualizations communicate information through aesthetics and graphical compositions. They produce novel insights into current trends and global events, and they show how these data sets fluctuate over time.

But what of emotive data: the information pertaining to the subjectivity of the human experience? Emotions, beliefs, feelings and desires exist in some form or another all over the internet. How do we create graphical representations of these emotion-based datasets?

2.1 Sentiment Analysis

Sentiment analysis is one way to factor human experience into data abstraction. Not only does sentiment analysis give us a glimpse into the emotional status of the billions of end users on the web, it also prompts designers and programmers to craft novel methods for transmitting and displaying these emotive networks.

Past examples of sentiment analysis include the exploration of human emotions in Harris and Kamvar's *We Feel Fine* [4], the precarious nature of teenage love affairs in Golan Levin's *Dumpster* [5] and the search for love in the online dating scene in *I Want You To Want Me*, also by Harris and Kamvar [6]. These applications exemplify the process of expressing the subjective, ever-shifting nature of the human experience through computational analysis. *Something is Wrong with Us* follows in this tradition. It is a repository of experiential data, based solely upon the concept of wrongness. It is an interactive data visualization culling data from the blogosphere, data that is made of introspective thoughts, confessions declarations, and judgments. All of which are founded in the discussion and analysis of wrongness.

3 The Phenomenology of Wrongness

We define wrongness as a phenomenological experience. At its core reside the elements of randomness and deconstruction, each promoting the eradication of pre-conceived distinctions and borders. Wrongness occurs during the day-to-day operations of our lives, when suddenly an expected narrative (a habitual experience,

an expected result, a belief system or a well-worn opinion) is disrupted, and subsequently altered. We encounter an object, person, or environment that unsettles us, attracting our full attention, and we consciously make note that the material (or data) associated with this experience is quite different from what we formerly supposed it should be. Wrongness sets the stage for that singular moment when we become fully engrossed in an experience because it does not compute with what we hold to be true.

These preconceived ideas or naturalized codes as Stuart Hall refers to them are “so widely distributed in a specific language community or culture, and learned at so early an age that they appear not to be constructed – the effect of an articulation between sign and referent – but to be 'naturally' given. [7]” These shifts from an a priori objectivity to an a posteriori wrongness range from the mildly amusing to the radically destructive. Whatever the efficacy of wrongness, one thing remains throughout; by introducing the unexpected into our lives, wrongness produces opportunities to re-evaluate our sense of self and to question those naturalized codes.

We define wrongness as phenomenological because wrongness is an experience; it is something that occurs in our consciousness. In his essay *Theoretical Foundations for Experiential Systems Design*, Mark Davis writes: “From phenomenology, we learn that experience is not a thing, but a process, and more particularly, a process that takes place in human minds/bodies. Therefore, experience itself is an inner psychic event which cannot be stored or transmitted, only the data we are reacting to and interacting with may be stored or transmitted. [8]” *Something is Wrong with Us* is a repository aggregating such data. It collects, analyses, and displays blog posts that reflect on the very materials that occasion the feeling of something being “wrong.” These reflections entail introspective musings, provocative statements, humorous observations, and morality judgments. *Something is Wrong with Us* follows Davis’ hypothesis that “we can only archive or transmit the materials (data) which occasion experiences in human minds, and every new interaction with these materials is itself a new experience. [9]”

4 Designing the Experience

Something is Wrong with Us is a data visualization of wrongness. From inception it was decided that the interface was to be minimalist, allowing the viewer to focus solely upon the data. As Davis states “choosing what data to record, when to record them, and from what point of view, and then choosing how to play back, sequence, visualize and interact with the data are all aesthetic choices [10].”

We chose to use the emotive database of the *We Feel Fine* API. It utilizes a sentiment analysis search engine, thus presenting us with a ready-made database of emotion from the blogosphere. We also chose to use smooth, natural animation as a navigational element in the form of vertical strings, or “tendrils,” anchored to the base of the screen. These tendrils were animated (using Processing’s *Perlin Noise* and Bezier curves) to move in a smooth continuous motion similar to a field of tall grass on a windy day. We chose to use this nonstandard navigation design to help create a visual clustering of wrongness. Each tendril represents a blog post, and when hovered over by mouse, its associated text renders onscreen.

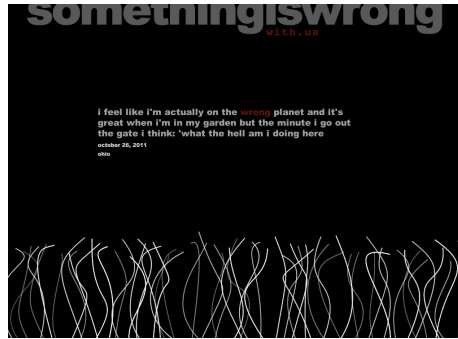


Fig. 1. Screenshot of the *Something is Wrong with Us* data visualization

4.1 Density Effect

What is unequivocally wrong to one person may be a minor infraction to another. We realized that the divergence in valuations of wrongness could lend themselves to interesting data visualizations. Thus we created what we term the *Density Effect*.

Traditionally, when visualizing relationships between data sets, designers connect nodes with linkages. The more lines the greater the amount of similarity. However, we chose to use a novel method to display the overall density of relationships. In *Something is Wrong with Us* tendrils glow with an intensity based upon their amount of similarity (a similarity that is determined by a word-by-word comparison of data.) As the user scrolls across the field of wrongness, the opacity of the tendrils fluctuate according to their similarities. The brighter the field the stronger the ties, the lighter the field the weaker the ties. This visual effect allows the user to quickly grasp the intensity of wrongness by the amount of glow in the tendrils.

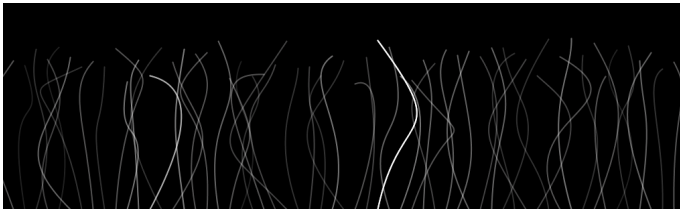


Fig. 2. A low density of relationships of wrongness

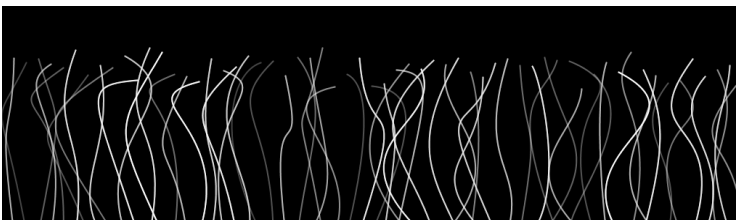


Fig. 3. A high density of relationships of wrongness

5 Future Work and Development

Future iterations of *Something is Wrong with Us* include expanding the data repository to include user input. Our goal is to create an interface that will allow users to post their thoughts and feelings of wrongness directly into the system. The database and interface will also be expanded to include imagery, video and audio. The tendrils design will also be revised, aligning the height of the tendrils with the length of their corresponding blog posts. This will create a less constrained layout and also help to visually enhance the density effect.

Currently, the interface displays a maximum of 60 instances of wrongness. Future designs will include a browsable timeline, allowing users to sort through wrongness and view spikes and trends that may occur in tandem with global events. Cultural probes will also be designed to provoke dialogues about wrongness and to research how certain communities and cultures perceive wrongness.

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