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## **Understanding the Mechanics of Pattern In a Digital Context: Towards Forming a Theory for Digital Humanities Research**

In the physical world where the Humanities has traditionally conducted its research, correctly identified pattern is always indicative of meaning. However, the digital turn has conditionally severed this given link between pattern and meaning, and now requires us to recalibrate our understanding of what pattern actually is when it is found in digital environments and is identified by digital tools. Pattern in the digital sense contrasts with randomness, and because both pattern and randomness are phenomena governed by information theory (Hayles, 1999), neither are related to meaning by default. Therefore, digital pattern is a phenomenon that can exist as meaningful, or as meaningless. This highlights the non-relation between pattern and meaning, and can be a source of difficulty for Digital Humanities researchers who may be struggling to interpret their results without the help of a theoretically grounded approach. In response to this problem, I draw on concepts from information theory as proposed by N. Katherine Hayles, and on concepts from Deconstruction, to offer a working theory which describes the mechanics of digital pattern, and suggests when it can be expected to express meaning.

In contrast, the typical Digital Humanities textbook engages with digital pattern as if it were a substitute for its traditional, physical counterpart. Dan Dixon (2012) for example miscategorizes meaningless pattern as erroneous, rather than as a type of pattern. Rens Bod on the other hand, appears to define pattern in the digital sense as an "...umbrella term that covers everything that can be found between inexact trends and exact laws" (2013, p. 172). Such characterizations of pattern are misleading because they fail to articulate precisely why the presence of digital pattern cannot be assumed to be indicative meaning. Further, Bod's fuzzy 'inexactness' diverts from scientific realities such as information entropy, whose understanding clarifies the nature of digital pattern, rather than obscures it.

The failure to adapt a theoretical understanding of pattern to the digital turn renders the standard textbook view of pattern ill-adapted for a robust and practical theory for the Digital Humanities. The struggle that researchers encounter when interpreting results generated by topic modeling is a prime example of why a more concrete theory of digital pattern needs to be established: to aid in clear, concise communication about how a digital pattern is capable of expressing meaning. I begin to form this theory by introducing digital pattern and randomness alongside the Deconstruction concepts of context, iterability, and trace (Derrida, 1988). I explain how these concepts are like mechanics which together work as Derridean forces enabling meaning, and how they can be used to concisely stipulate whether a digital pattern is meaningful or not. This is possible because context, iterability, and trace allow meaning to be deconstructed into analyzable components, and their presence or absence to be identified in digital pattern. I demonstrate this argument for digital pattern as a phenomenon which cannot be expected to inherently carry meaning, by using the popular

topic modeling method Latent Dirichlet Allocation (Blei, Ng, & Jordan, 2003) as a case study.

- Blei, David M., Ng, Andrew Y., and Jordan, Michael I. (2003). Latent Dirichlet Allocation. *Journal of Machine Learning Research* 3, 993-1022.
- Bod, Rens. (2013). Who's Afraid of Patterns? The Particular versus the Universal and the Meaning of Humanities 3.0. *Low Countries Historical Review*, 128(4), 171-180.
- Derrida, Jacques. (1988). Signature, Event, Context. *Limited Inc.* (pp. 1-24). Northwestern University Press. PDF.
- Dixon, Dan. (2012). Analysis Tool or Research Methodology: Is There an Epistemology for Patterns?. In David Berry (Eds.), *Understanding Digital Humanities*. (pp. 191-209). Palgrave Macmillan. PDF.
- Hayles, N. Katherine. (1999). Virtual Bodies and Flickering Signifiers. *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics* (pp. 25-49). University of Chicago. PDF.