

Speaking Anthropocene: Linguistic settlements in post financial crisis corporate reporting

Words are performative: they stage or settle ‘warlike’ competitive games (Rindova, Becerra, & Contardo, 2004; Guo, Yu, & Gimeno, 2017), manage impressions (Whittington, Yakis-Douglas, & Ahn, 2016), expand or contract meaning (Cornelissen, Mantere, & Vaara, 2014; Whittle, Mueller, Gilchrist, & Lenney, 2016), and reinvent history (Basque & Langley, 2018).

Exogenous shocks such as crisis, disasters, or scandals can trigger sudden shifts in language use. Communication can also anticipate changes: words ‘infiltrate the interactions between firms and their external stakeholders’ (Rindova et al., 2004), escalate or harness emotions (Fan & Zietsma, 2017; Toubiana & Zietsma, 2017), and keep rivals or critics at bay (Guo et al., 2017). Words can thus orient attention and sensemaking under duress (Colville, Pye, & Carter, 2013) and realign aspirations (Penttilä, 2019).

Previous studies on communication surrounding exogenous shocks have identified subtle linguistic updates in the wake of the shocks (Nigam & Ocasio, 2010) and suggested that such changes in rhetoric, vocabularies or grammatical structures may prompt subsequent shifts in attention (Ocasio, Laamanen, & Vaara, 2018).

This study contributes to the meso-level intersection of language and attention in the aftermath of crises (Hoffman & Ocasio, 2001). Several scholars have already highlighted the role of language and communication at micro level, such as individual narratives and vocabularies (Wood, Bakker & Fisher, 2019), or analogies or metaphors (Gavetti, Levinthal, & Rivkin, 2005). Many other scholars focused on macro-level changes, such as group-level narratives (Boudes & Laroche, 2009) or stakeholder discourses (Nigam & Ocasio, 2010; Hardy & Maguire, 2010). Micro processes explain how language helps or hinders interpretation (Wood et al., 2019) and sense-making (Gavetti et al., 2005), and knowing Macro processes underscores the role of language in field (re)configurations (Nigam & Ocasio, 2010).

This paper asks *how language orients meso attention in the wake of crisis*. The financial crisis in 2008 disrupted business as usual, jeopardizing their legitimacy in the eyes of critical stakeholders and in extreme cases threatening the continuity of their operations. In the post-crisis, customers, investors and employees sharpened their expectations on accountability and transparency (Porter, 2014). Most firms were also held up to progressively higher stakeholder demands (Giannarakis & Theotokas, 2011; Kemper & Martin, 2010).

Using topic modeling for 1,531 sustainability reports issued by public firms in the U.S. and Canada from 2009 to 2017, we capture subtle linguistic choices and explore how these are being updated in different sectors over time. In order to reveal the performative function of language in sustainability reporting, we employed latent dirichlet allocation (LDA) topic modeling (Blei et al., 2003; Blei, 2012). This is a machine-learning approach which relies on the dirichlet distribution that reflect a given yet hidden structure (Griffiths & Steyvers, 2004). A

topic is equivalent of a group of words which co-occur frequently and is often conceptualized as frames, themes, or motifs (DiMaggio, Nag, & Blei, 2013; Mohr & Bogdanov, 2013).

Topic modeling reveals the meanings of words by taking into account frequently co-occurring references (Giorgi & Weber, 2015). Combining the literal meanings of each word with the assemblage of words accompanying it (Lockwood et al., 2019) enables richer interpretations of organizational communications, especially when organizations address multiple audiences at once. In topic modeling, the same word can appear in different assemblages – with the latter affording it more nuanced meaning. This approach involved three steps. We first used several text preprocessing techniques to shape raw textual data into a corpus. We then ran LDA topic model on the corpora to generate a set of topics. Our main goal in this second step was to find the optimum number of topics which is broad enough to discover the hidden structure in detail but at the same time can elaborate the area of focus. We inspected two outputs – a matrix of topic-documents and a list of words for each topic. Using Gibbs sampling, we inferred 12 topics which have the lowest perplexity score. In the third step, we inductively grouped and interpreted these 12 topics by iterating between our findings and theory.

The word assemblages derived through topic modelling revealed three distinct types of linguistic performativity. First, two distinct word clusters denoting financial versus social priorities co-evolved post crisis. Rather than polarizing firms' strategic priorities, these two dimensions raced in tandem and balanced meso attention. Second, previous linguistic settlements that pegged firms squarely into sector-appropriate ways of speaking came undone. Despite the persistence of sectoral word assemblages post-crisis, topic modeling reveals emergent spatiotemporal references by which firms repositioned themselves linguistically against previously indistinguishable peers. Bansal, Kim and Wood (2018) warn of persistent (Whiteman, Walker, & Perego, 2013) and consequential (Wright & Nyberg, 2017) mismatches in the grain of attention between firms and their natural environments. They also theorize how the language of spatiotemporality may recalibrate firm-level attention. Our machine-induced topics confirm that firms quickly update the spatiotemporal resolution of their sustainability reports in the wake of the financial crisis. In so doing, they transcended their previous, and persistent, sector-level linguistic settlements and begun to realign their financial and social responsibilities.

Our paper reveals subtle changes in the agency of texts during critical periods. Our inductive findings underscore the underappreciated functionality of sustainability reports in setting and maintaining a spatiotemporal resolution of corporate attention (Basu & Palazzo, 2008). By inductively modeling how combinations of words precedes and prefigures firm's attention structures in contested sectors, this dissertation-based paper contributes to growing interests in how linguistic theories and tools enrich our understanding of attention shifts (Bothello & Salles-Djelic, 2018; Pencle & Mălăescu, 2016).