

What Do You Think? The Structuring of an Online Community as a Collective-Sensemaking Process

Yiftach Nagar

MIT Sloan School of Management, MIT Center for Collective Intelligence
100 Main St., Cambridge, MA 02142 USA
ynagar@mit.edu

ABSTRACT

I observe conversations that take place as Wikipedia members negotiate, construct, and interpret its policies. Logs of these conversations offer a rare – perhaps unparalleled – opportunity to track how individuals, as they try to make sense, engage others in social interactions that become a collective processes of sensemaking. I draw upon Weick’s model of sensemaking as committed-interpretation, which I ground in a qualitative inquiry into policy discussion pages, in attempt to explain how structuration emerges as interpretations are negotiated, and then committed through conversation, and as they are reified in the policy. I argue that the wiki environment provides conditions that help commitments form, strengthen and diffuse, and that this, in turn, helps explain trends of stabilization observed in previous research. The proposed model may prove useful for understanding structural processes in other large wiki communities, and potentially in other radically open organizations.

Author Keywords

Sensemaking, structuration, distributed cognition, social cognition, Wikipedia, organization studies, organization theory, committed-interpretation, collective-intelligence

ACM Classification Keywords

K.4.3 Organizational Impacts: *Computer-supported collaborative work*. H.5.3 Information Interfaces and Presentation: Group and Organization Interfaces – *Web-based interaction*. J.4 Social and Behavioral Sciences: Psychology.

General Terms

Human Factors; Management; Theory

"A dominant question for scholars of organizing is: How do people produce and acquire a sense of order that allows them to coordinate their actions in ways that have mutual relevance?" [27]

"Wikipedia did not arise spontaneously, it arose through people interacting and, as a result of that interaction, finding ways that worked." Interviewee 3 (I3) [10]

INTRODUCTION

How groups, organizations, communities and societies form and change over time has been a key subject of inquiry in the social sciences. The structural perspective [1, 21] posits organizational transformation as endemic to the practice of organizing, embedded in, and emergent from the situated daily practices of organizational members – *"an ongoing improvisation enacted by organizational actors trying to make sense of and act coherently in the world"* [21]. In this paper, my goal is to track such efforts of sensemaking by people in one social system, to learn about how these efforts lead to structuring of the organization.

The organization chosen as the site for this inquiry is Wikipedia, for a number of reasons. The first is opportunistic: studying real social settings, ‘in the wild’ often entails spending relatively long periods of time in the field, especially for researchers who are interested in collecting micro-level data. Also, ethnographers and other social scientists who pursue micro-level data, are bound to miss a lot of what is going on, as they are limited, physically, to being at certain times and places. The discussion archives of Wikipedia provide us unique access to vast amounts of verbatim conversations among its members. Because most interactions among Wikipedians are done online and remain documented, we get to glimpse into Wikipedia’s communal and organizational stream of consciousness. Second, the shape of social interaction inside many organizations is changing as interpersonal communications are gradually shifting weight to textual interactions over social-software platforms. Wikipedia is one extreme example, as interaction among its members is almost entirely public. It therefore not only provides opportunity to study micro-level interactions among members of *an* organization, but rather, to do so in web-based organization that is radically open and distributed.

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Assuming more organizations in the future will share at least some of these qualities [16, 17] (even if to lesser extent in comparison to Wikipedia), it is interesting to learn about how they might work, and to see whether, and to what extent, theories developed to explain more traditional organizations hold, and what assumptions might need revision. Finally, Wikipedia in itself has drawn focus of a diverse community of researchers, and this study can enhance our knowledge of some aspects of its work – specifically, to highlight some processes through which parts of its structure are formed and transformed.

I therefore set out to explore the ongoing process of sensemaking Wikipedians conduct as they discuss, negotiate, construct and change one of its policies. As detailed later, I took a grounded approach to this qualitative inquiry, while leaning on ideas from Karl Weick's work on sensemaking in organizations [26, 27] in interpreting and explaining the findings.

BACKGROUND

The Role and Importance of Wikipedia's policies

Wikipedia's success (as measured by several parameters, including popularity, engagement, and quality of its articles) has surprised many skeptics, and has been widely discussed. Wikipedia has organically developed a complex bureaucracy, which includes an organizational structure, organizational processes, and many formal "objects", including policies, guidelines etc. Several researchers point to the important part policies, rules, and guidelines play in Wikipedia's daily operation and their contribution to its success [e.g. 3, 5, 7, 11, 15, 20, 24].

Policies deal with a wide range of contexts – from matters of content, to rules of proper conduct, to discussion of enforcement and more [cf. 3]. Thus, they help Wikipedians make sense of complex situations and serve as references to legitimize action [3, 15].

Policies are not merely prescriptive of social behavior. Wikipedia's policies and guidelines (and all other components of the bureaucracy) are developed by the community in attempt to capture and institutionalize best practices. What is considered best practice is a matter of consensual view, and it is expected that any proposed change should usually be discussed in advance "to ensure that the change reflects consensus"¹. Thus, policies and guidelines are also reflective of social practice [see also 10].

The accounts discussed above have helped us gain insight into the role of policies in regulating ongoing activity in Wikipedia. What has been less discussed, however, is the *process* by which the bureaucracy emerged, and specifically, how the policies are formed and transformed. Forte and Bruckman [10] dedicate parts of their discussion

of Wikipedia's distributed governance structure to the process of policy creation, but the theoretical lens guiding their inquiry is a sociological one, drawing on theories of commons-based governance, and accordingly, their focus is the organizational environment and setting rather than the cognitive processes and micro-level interactions that lead to the social construction of the policy. Elaborating a case study of the creation of one of Wikipedia's policies, they carefully examine at the "thick tangle of circumstance" that set the stage for the process of creation of what started as a guideline, and later became a policy, and summarize: "*Eventually, after much off- and on-wiki discussion about the situation, a proposal page was started and the community began constructing what was initially a proposed guideline. Eventually, the page reached a form acceptable to most community members*". What they leave unexplained, when they write "Eventually" (twice!), is exactly this "much of- and on-wiki discussion about the situation" and the social process of construction of the proposed guideline until it "reached a form acceptable to most community members".

In this paper I take a close look at the discussions among Wikipedians as they struggle to make sense of their social reality and reach consensus. I posit these discussions as a collective process of sensemaking, and, drawing on Weick's concept of *committed interpretation* [27], propose a model of how social structures within Wikipedia might emerge from this process. Before discussing the research, I briefly introduce some ideas about sensemaking in organizations.

Sensemaking and Committed Interpretation in Organizations

The study of sensemaking in organizations has produced tremendous amounts of work, which cannot be reviewed here. For the purposes of this paper, it is useful to highlight just a few points regarding sensemaking that will provide a substrate for discussion.

What is the study of sensemaking in organizations? The following points are drawn, adapted, and synthesized mainly from Weick [26], and, due to limits of scope, are brought here only in summary form². Three – interrelated – key questions for researchers of sensemaking in organizations are the following: "*How are microstabilities produced in the midst of continuing change? How do people produce and acquire a sense of order that allows them to coordinate their actions in ways that have mutual relevance?*" [27], and, "*how are meanings and artifacts produced and reproduced in complex nets of collective action?*" [9, cited in 26]. Sensemaking has to do with

¹ http://en.wikipedia.org/wiki/Wikipedia_policies, accessed 2010-5-15

² Interested readers would find a much more subtle, elaborate and nuanced discussion in Weick [26]. The discussion in chapters 1, 2, 6 and 7 is especially insightful and related to the ideas discussed here.

interpretation, of course, but interpretation is just one component of sensemaking, which is also concerned with the construction of reality. Sensemaking is enactive of sensible environments. What this means is that as people try to make sense of reality, they do more than trying to cope with entities that already exist in the world and interpret them: in organizational life, as people act, they create materials and settings which then become constraints and opportunities in the environment they face.

Sensemaking can take many forms and work in many ways. In this paper I use one prototype of sensemaking in organizations – *Committed Interpretation* – that is offered by Weick [27] as a possible answer to the first question mentioned above (and, which, I believe, helps deal with the other two questions as well). In concise form, *"The concept of committed interpretation suggests that people become bound to interact³ rather than acts, that the form of interacts is itself committing, and that justifications of commitment tend to invoke social rather than solitary entities. These three seeds of social order enlarge and diffuse among people through enactment, imitation, proselytizing, and reification, thereby imposing order on confusion"* [27]. In the following sections I elaborate this concept, ground it in data collected from policy discussion pages, and show it can help us understand and explain the processes of structuring of Wikipedia, beyond what was offered in previous accounts.

TRACKING THE ONGOING PROCESSES OF POLICY STRUCTURING

Method

I focused my inquiry on Wikipedia's "Neutral Point of View" policy (NPOV), which is one of its core content policies (arguably, the most fundamental), and one which has drawn a lot of attention, discussion and action, as I detail below. In a nutshell, this policy states: "Articles mustn't *take* sides, but should *explain* the sides, fairly and without bias. This applies to both what you say and how you say it". As Reagle [22] points out, "...in the Wikipedia culture, the notion of 'neutrality' is not understood so much as an end result, but as a process"⁴, and this policy details parts of this process.

The centrality and importance of NPOV to Wikipedia and its special constitutional status are captured in the following remark by Wikipedia's co-founder and de-facto leader, Jimmy Wales, excerpted from a talk he gave in 2005:

³ An *interact* occurs when an action by Person A evokes a specific action in Person B. If B's response evokes a response in A, a double interact exists, and so on.

⁴ While I agree with Reagle that this is the original intent of Wikipedia's founders and its core elite, based on my observations I believe that not all editors understand this difference, or accept it. This discrepancy is one source of fuel for the continued discussion of NPOV.

"So how do we do this? [...] how does it work? So there [are] a few elements, mostly social policies and some elements of the software. So the biggest and the most important thing is our neutral point of view policy. This is something that I set down from the very beginning, as a core principle of the community that's completely not debatable." [25]

It is no wonder, therefore, that this policy is highly visible and serves as reference in many discussions. Ironically, what was proposed as a simple, "completely not debatable" core principle is highly discussed even today, a decade after the founding of Wikipedia. While the rate and intensity of the discussion varies, it is yet to reach an asymptote or level, and it may possibly continue indefinitely. According to WikiChecker (<http://en.wikichecker.com>), between April 2006 and May 2010, more than 800 people have participated in the online discussion of the NPOV policy page itself (i.e. in the associated "talk" page), and performed about 9500 edits of that page. Note that these discussions are assumed to revolve mainly around issues of framing the policy itself, whereas discussions of interpretation related to enforcement of the written policy are supposed to take place elsewhere (mainly over the Neutral point of view Noticeboard and in administrator discussions). The policy itself has been edited over 4,500 times between February 2002 and November 2011 (more than once a day, on average), by more than 1700 people.

I focused my attention on a period ranging from July 2005 to January 29, 2006 (NPOV discussion archives 004 – 014), as that period has produced profuse discussion (11 archives for a period of 7 months, out of 37 archives for the period 2004 – February 2010). I coded about one quarter of those 11 archives, and also sporadically sampled some NPOV discussion pages from earlier and later periods. I started with line-by-line coding [8] which was relatively open at first, and then gradually moved to coding larger fragments in a more focused manner. With the goal of tracking individual and collective acts of interpretation, sensemaking, intelligizing and construction, informed mainly by discussions of sensemaking (Weick) and structuration (Barley, Orlikowski, and others), I looked for expressions of surprise, puzzle, questions, clarifications, agreement and disagreement, divergence and reconciliation, and other expressions that related to sensemaking and interpretation. I augmented this by coding additional pages of the discussion around Wikipedia's "Five pillars" page⁵, and have reviewed several other auxiliary materials including interviews with Jimmy Wales, correspondence of Larry Sanger (co-founder of Wikipedia and its first community discussion leader), and many other online

⁵ This is a relatively new page, which is an attempt to create a higher level framework – a constitution of core principles out of which other rules are derived. This page's necessity, its status, and its content have all been subject to debate.

resources, and also used tools e.g. Wikidashboard [23], and Wikichecker, that helped me navigate Wikipedia and make sense of what I see.

Committed Interpretation in Wikipedia

In this section I present a thick description of the processes of sensemaking I have observed, grounding the discussion of 'committed interpretation' in the data.

Committing to Interacts

Sensemaking, as most action, is inherently a social phenomenon. As people try to make sense, they interact with others, whether those others are present in the moment, or imagined, because people know their actions and explicit interpretations will have to be understood, accepted, and implemented by others. Therefore, Weick argues, when people become bound to acts, those acts tend to be interacts rather than solitary acts. Further, in social settings, actions that are public, irrevocable, and volitional are harder to undo and disown, and therefore, create commitment. Therefore, Weick concludes, "interacts themselves generate their own conditions of commitment since each party's action is public, irrevocable, and volitional relative to the other party in the exchange" [27].

In Wikipedia's discussion pages, every act – and therefore, also, every interact - is indeed public, irrevocable (as the history of edits, including that of discussion pages, is kept), and of course, volitional. The Wiki environment, as a medium for interaction, therefore provides conditions that serve as catalysts for turning such interacts to commitments, because each party's action is visible not only to the other party in the specific exchange, but to anyone (both inside and outside the community), for an indefinite time.

Interaction over the discussion pages takes form in various rhetorical acts. The main form I have observed involves posing questions and proposing answers.

Posing Questions

I have identified several archetypes of questions that people ask, including informative questions, provocative question, etc. Notably, editors ask a lot of questions in attempt to make sense of others' views. I coded those as follows:

1. Asking clarification question

For example: *Causa, why do you say there is no need for an introductory sentence? If we have no sentence and no tag (and it's unlikely that any of the standard tags fit this page, so tagging in this case effectively means putting the introductory sentence into a box), then people coming to this page won't know what its purpose or status is. Why would we want to add to the mystery here? (That's not to say someone might not improve the introductory sentence we currently have.)*

<<Kotniski (talk) 08:56, 7 November 2009 (UTC)

As seen in that quotation, clarification questions are often asked not only to understand an issue about the policy itself, but rather, in order to understand *what someone else thinks* about that issue. In these cases, the question may sometimes be explicitly addressed to a specific person (e.g. "Causa, " above), but many other times it is clear from the discussion that a dialog or a conversation develops organically between two or more people as in this example:

I agree with John that a "re-shuffle" of relative importance of policies and guidelines, as originally proposed by TMoW, is probably not the best way forward (note that I propose some "precedence-reshuffle" every once and a while myself, but that's a very slow moving process, best you know that)

--Francis Schonken 21:17, 9 October 2005 (UTC)

Thing is, some POVs aren't worth including at all. But how to distinguish? As for NOR⁶, i mean prove your point on the talk page (with ext sources) to see if it worth including. This is what i mean by having a reliable claim before its elevated from "justanother-claim" to another "POV". As John says, there are lots of editors which include any ol' claim to maintain NPOV. And once you decide to include, then by what degree and how? I feel a clarification/specification would clear up a lot. Okay so we kind of agree. But now what?

--The Minister of War 05:54, 10 October 2005 (UTC)

Again, in this excerpt we see that the user named "The Minister of War" is interested in knowing what his peers think. Thus, implicitly, he (she?) does not perceive the policy as a "fixed object" that is "out there". Rather, the policy is viewed as what he and his peers decide that it is - what they *make* of it. Asking "But now what?" is an attempt to elicit a proposition for action, and to continue the conversation, by which the interact will become a double interact, etc., and commitments will grow.

2. Asking about behavior, trying to understand the rules

Such questions are usually asked by people not sure what to do in various cases. Technically, the policy discussion pages are not the 'right' place to do this. However, since the bureaucracy is so overwhelming, some people are just not sure where they should channel their questions. These are not "total newbies" usually, since those are not very likely to reach the policy discussion pages. Thus, although not 'appropriate', discussions about policy use and enforcement sometimes blend into the discussion about the policy construction.

Here are two examples:

⁶ Wikipedia's policy on "No original research".

I found some questionable pov elements from an article on John Milius and added a check pov template and removed the questionable elements. There has not been any response on the talk page nor any further revisions. Do i take down the check pov template? how long do i have to wait?

-Seasee 22:10, 21 Jun 2005 (UTC)

Some articles use terms like "God", "white people", "luck", "Jewishness", "fairies", "nobility" that people have invented to support various religious/superstitious or political programs. If I don't believe any of this stuff do I have a POV? Should I insert "so-called" or "alleged" in front of these terms?

24.64.166.191 06:03, 9 Jun 2005 (UTC)

All these types of questions demonstrate difficulties in interpreting the meaning of the policy. What people are actually doing by asking them, is trying to make sense, and their way to try and make sense is to engage others in conversation.

Engaging others in conversation is not the only way to try and make sense. One could, for example, read more. Obviously, some people may prefer to read more in order to try to make sense, while others prefer to ask. Even if more people prefer to try other methods first, eventually, there are at least some people who pose opinions and questions on the policy discussion page. This engagement of others in the hermeneutic process is how the personal act of trying to make sense of things first becomes an interact (by asking a question, and receiving answer); and then, the interact becomes committing – as the person either accepts the answer (the simple case), or resists, which may lead, through a longer process, to a change. Individual attempts to make sense thus become a collective process of sensemaking. Through this process, participants (both active and “passive”, i.e. those who read the conversation of others) gain a better understanding of what others think/feel, and of other facets of their environment (temporary and tentative as those may be), and interpretations are created, negotiated, modified and committed. The policy, then, is the manifestation of these commitments.

3. Asking questions as a rhetorical technique

A different class of questions comes up, which are part-question, part-suggestion. When editors wish to propose a change in the policy, they sometimes do it by posing a question. This is done in the spirit of Wikipedia which strives to achieve consensus, and so, before actually being bold and introducing the change, they ask others for their opinion. For example:

There are places in the Wikipedia namespace where advice and guidelines are offered (as distinct from policy), and while a majority of Wikipedians may support this advice, there may be examples where a significant minority disagree (I have in mind inclusionist/deletionist type

dichotomies). In such cases, should the NPOV policy be read as to force the inclusion of strong minority positions (e.g. ~20% support) into pages that discuss Wikipedian behavior (e.g. Offer voting guides). Dragons flight 20:47, Jun 19, 2005 (UTC)

Asserting by asking is another way of using questions as a rhetorical "trick". The person asks a seemingly technical question about something perfunctory and at the same time makes a statement by taking something as fact. For example, the following question:

Where would it be appropriate to add a blurb about quotation marks being used as a form of bias?

is seemingly technical - but at the same time also states that quotation marks are a form of bias.

Rhetorical questions and provocative questions are also occasionally posed, to promote or challenge an ideology or point of view. Sometimes, this can trigger further discussion, as in this case:

According to Wikipedia founder Jimbo Wales, NPOV is "absolute and non-negotiable". How is this different from religious dogma? It seems to me NPOV is taken to absurd extremes by some self-important administrators too enamored of their little barnstar award trinkets. Not to mention it is overly sanitizing the pedia to where even a sense of humor becomes verboten, hence the need for the new admin award category: the award of the NPOV Nazi

(unsigned, undated)

Well, you do have to give some credence to this argument. Whenever anything is taken to be an absolute, it opens the door for a person to manipulate that to their own ends. Let me give you an example: the Salem Witch Trials. All someone had to do was describe someone as a witch, and then they could freely assault that person with no consequences. Well, isn't it possible (indeed, likely) that someone might take this sacred cow, NPOV, and accuse someone else of being not NOPV simply for the ability to attack them or their ideas free of consequences? Surely, there must be safeguards to protect those who are the unfortunate victims of this sort of manipulation. May I ask what provisions you have thought of to prevent NPOV from becoming a tool for witchhunters?

Dave (undated)

But note: even though rhetorical questions are not directly looking for information, a rhetorical act is one whose purpose is to persuade others. In that, rhetorical questions, too, are a mechanism by which people attempt to engage other minds, offer and seek interpretations, and pursue common grounds.

Proposing Answers

By answering questions posed on the discussion pages, I find that Wikipedians are doing several things, beyond the sharing of ‘dry’ information:

1. Offering interpretation.

Often (and especially when discussing such a term like NPOV, which is loaded with ambiguity and possible interpretations), questions are not simple informative questions, but are posing principle challenges of interpretation. Questions and answers serve as mechanism for a social process of hermeneutics. Questions of interpretation come up in the discussions of people who actually enforce the policy (which I do not discuss here), but I also found some traces of these discussions in the policy discussion pages. Indeed, it is often difficult, and perhaps impossible, to agree on a common interpretation. This difficulty is evident in the vibrant discussion of NPOV, as evident both in many of the actual answers I have observed and in the numbers that point turbulent editing of the policy, and which can also be inferred from the following note of Butler et al. [7]:

While the "Ignore all rules" policy itself is only sixteen words long, the page explaining what the policy means contains over 500 words, refers readers to seven other documents, has generated over 8,000 words of discussion, and has been changed over 100 times in less than a year.

In this context, it appears that the concept of *committed* interpretation should be preferred over that of *shared* interpretations, or *shared* meanings, as it alludes to the *satisficing* character of the activity of people [see also 26 in that regard]. Meanings and interpretations are never shared by all the people, all the time, under all circumstances. They are always only temporarily shared, never in whole, never by all. But while it is not always possible to have shared interpretations, it is still possible to find common ground even without them, by finding such interpretations to which people can commit. These may at least allow action to proceed.

Similar observations are made by Brennan as she discusses grounding in conversations:

"Understanding is not the same as agreement or uptake. When speakers and addressees have incompatible intentions, they might understand one another perfectly well but 'agree to disagree'" [4]

"Grounding Is Only as Precise as it needs to be [...] people in conversation do not try to get their hypotheses to converge perfectly-in fact, since neither party is omniscient, this is not even feasible. Instead, they try to reach a level of convergence that is sufficient for current purposes, satisficing in Simon's (1981) terms. "[ibid.4]

Thus, it should be clear that committed interpretations are only temporary points of stability in space-time, sensitive to change in circumstances. As circumstances change, commitments can be revisited, and broken.

2. Explaining and signaling to others what they think is the answer to the question.

Because NPOV deals with such fundamental issues that touch epistemological and even ontological issues and eventually boil down to *beliefs*, answers serve not only to express an opinion. By *signaling* I mean that, eventually, whether formally or not, Wikipedians do hold tallies of voices. Consensus is a key value in Wikipedia, but majority voices are counted more than minority voices (in fact this is a part of NPOV itself). If more people support an opinion - even in a policy - this opinion is more likely to be represented. I found this sort of signaling in another type of contribution to the discussion which is not technically an "answer" and which I coded as "Seconding input from another member" or "supporting proposition". Sometimes people would write things like "I agree" or "I agree with X" or similar. Indeed, at some point in time a norm of stating one's opinion in one word - "Agree" or "Oppose" (or similar words) - followed by further explanation, has emerged in policy discussion pages. By doing so, people clearly indicate their commitment to the proposed interpretations.

3. Explaining to themselves.

The mere act of writing helps people construct their arguments. By choosing to answer, people engage in a committing interact. It is easy to envision a case where a person would answer a question, and then be dragged, against her/his will into a longer dialog, and indeed such cases appear frequently in the discussion pages (with some comments expressing weariness and loss of patience). But once the conversation has started, it is not easy to disengage from it, at least not without 'losing face'. When it comes to persuasion, disengaging may have a price that is higher than that of not engaging in conversation in the first place, as it may be perceived as "admitting" to being wrong, or to accepting a certain opinion with which the editor does not really agree.

Thus, the entire discussion - questions and answers, may lead, eventually, to the forming of new interpretations that lead to changes to the policy, or, in other cases, serve to and re-enact the policy.

Invoking Policies to Justify Commitment

As mentioned above, policies and guidelines help Wikipedians make sense of complex situations and they are widely used by Wikipedians as references to legitimize action [3, 15]. For example, Burio et al. [6, reported in 14] mention that the "3-revert-rule" policy which was introduced in response to a growing number of "edit-wars" (recurring reverts by two sides arguing) has had an immediate effect of decreasing occurrences of those "double reverts". As one Wikipedia editor noted:

"The degree of success that one meets in dealing with conflicts (especially conflicts with experience[d] editors) often depends on the efficiency with which one can quote policy and precedent." [14]

These findings are in accord with the third part of the definition of committed interpretation, namely that *justifications of commitment tend to invoke social rather than solitary entities*. My data collection focused on policy discussion pages, where the discussion mainly concerns the *construction* of the policy, rather than its *use*, and therefore references to policies seem to appear somewhat less frequently, but they certainly do appear, as do references to other social entities such as Wikipedia's Arbitration Committee (ArbCom)⁷.

Beschastnikh et al. [3], find significant growth in policy citations over time. They also find that enforcement (as manifested in policy citations) has diffused into the larger body of registered users, with the practice of policy citation increasingly becoming commonplace. Similarly, Butler et al. [7] and Forte et al. [12], note that over time making changes in the policies has become more difficult, and has slowed. Weick's conceptualization of the process of committed interpretation helps explain for these observed phenomena as well as it argues that what he recognizes as the "three seeds of social order" (namely: *that people become bound to interact rather than acts, that the form of interacts is itself committing, and that justifications of commitment tend to invoke social rather than solitary entities*), "enlarge and diffuse among people through enactment, imitation, proselytizing, and reification, thereby imposing order on confusion". Invoking policies (and other parts of the bureaucracy) in the discussion as a means to justify commitment serves to reinforce them. As policies are enacted by administrators, and invoked as justifications in discussion, they become reified, and commitments grow. This creates a positive feedback loop, where enactment and reification of the policy feed each other.

As this "evolutionary" process makes changes to the policy rarer, editors redirect their efforts to creating and updating less formal parts of the bureaucracy, such as guidelines and essays [20].

The Seeds of Change

Weick asks how people produce and acquire a sense of order that allows them to coordinate their actions in ways that have mutual relevance. His answer is: by concrete communicative interaction in which people invoke macro structures to justify commitments. He concludes:

"Thus, social order is created continuously as people make commitments and develop valid, socially acceptable justifications for these commitments. Phrased in this way, individual sensemaking has the potential to be transformed into social structures and to maintain these structures. Commitment is one means by which social structure is

realized. This proposal suggests a possible mechanism by which structuration (e.g., Barley, 1986; Giddens, 1984) actually works."

Indeed, the story I told so far, is mainly a story of regulation and creation of stability. But what about organizational change?

Structuration theory offers a dialectical, reciprocal account of social change, and has been adopted and adapted by organizational researchers to explain organizational change. It posits that social structures enable and constrain the actions of agents, and yet, do not determine their actions. Several notable works have tracked structuration processes following an external 'shock' such as the introduction of new technologies [1, 21], or new regulations [13] into an organization. Although in all these works change starts with an external shock, Orlikowski highlights the notion of change as an ongoing improvisation and quotes from March that "in its fundamental structure a theory of organizational change should not be remarkably different from a theory of ordinary action" [18, quoted in 21]. She further locates the beginning of the change process in the attempt of people to make sense of a new situation.

Obviously, when a big, external shock is introduced, it is not surprising that people try to make sense of it. But, excluding external shocks, what causes a new situation during 'ordinary action'? and how, exactly, are people attempting to make sense?

As seen in Wikipedia's policy discussion pages, collective-sensemaking can also start with a single person reviewing or reflecting previous understandings without any evident external trigger.

In Wikipedia, every newcomer may introduce an 'occasion' to discuss and negotiate meaning. This might be somewhat different in traditional organizations. There, if a newcomer does not understand something as s/he tries to make sense of 'what's going on' – the rules, the culture, the norms, s/he will likely ask a few people who are close (by rank, by geography, by departmental affiliation, by situated interaction). If that newcomer has other ideas, philosophies, and thoughts about values, and about how things should work, he/she might reserve those to him- or herself, so as not to lose status. If they are expressed, chances are they will not make a lot of 'waves', as this newcomer is not yet well connected. Therefore, chances that the existing order-of-things will be challenged are low. But newcomers to Wikipedia are slightly different. While status does play a role in Wikipedia, it probably has lesser implications on one's life overall, compared to member status in traditional organizations (where it can have significant effects people's social life and financial situation). And, importantly, whatever is said on the policy discussion page can be seen by the entire community. Thus, simply dismissing someone just because s/he is new, without reasoning, while perhaps possible, is more problematic.

⁷ The ArbCom is "a panel of editors that imposes binding rulings with regard to disputes between other editors". See [http://en.wikipedia.org/wiki/Arbitration_Committee_\(English_Wikipedia\)](http://en.wikipedia.org/wiki/Arbitration_Committee_(English_Wikipedia))

So the process might just start with a new person who lacks knowledge about previous understandings, or an editor who decides to challenge the status quo. In either case, a change process may begin with just one small question, and an answer. What starts with a cognitive puzzle, turns into an act (asking a question), which really is already an attempted interact with others (who at first may be assumed, or imagined); which then turns into an interact when they answer, and may, to the extent the conversation evolves, become a seed of a structurational process. Observing the online discussions through a collective-sensemaking lens can therefore extend our understanding of how changes to the policy (and then, to the organization) originate and develop from individual attempts to make sense. Through conversation, cognitive efforts turn from individual to social, and commitments are formed and reified in the shape of policy text.

Citing March, Schulz, & Zhou [19], Butler et al. note that "*Because they are explicit and visible... written policies and rules are often sites of conflict*" [ibid7]. They further note that due to these characteristics (visibility, clear boundaries) written policies have greater potential as levers for stakeholders to affect the community, or in other words, to initiate change [ibid7]. Indeed, conflict is evident in many of Wikipedia's policy talk pages which I have reviewed. Yet the discussions I have read reflect different types of conflict – of interest, of world view and of interpretation. Therefore I find the following quote from Barley [2, brought in 21] more subtle and accurate in describing how policies can be sites in which, and around which, interpretation and negotiation take place:

" . . . Because forms of action and interaction are always negotiated and confirmed as actors with different interests and interpretations encounter shifting events (. . .), slippage between institutional templates and the actualities of daily life is probable. In such slippage resides the possibility of social innovation. "

I would even go further and say this: based on my observations so far, *tensions* between the "organizational templates", i.e. the policies, rules, guidelines and templates of Wikipedia and the "actualities of life" in Wikipedia are not only *probable*, but rather, *constantly present*. The case study of the creation of the "Biographies of Living Persons" policy, as depicted by Forte and Bruckman [10] provides an example of several such gaps and tensions that formed between Wikipedia's organizational templates and the actualities of life at a certain period. Accumulation of several such tensions was the trigger that drove efforts, acts and interacts of interpretation and sensemaking, which in that particular case initiated an organizational change in the form of the creation of a policy. In other cases, similar efforts often end in reinforcing existing structures.

CONCLUSION

Wikipedia's discussion pages provide a unique opportunity for micro-level organizational inquiry. These pages,

powered by MediaWiki software, have two unique properties (when juxtaposed with discussions that take place in traditional organizations, or with private discussions in other online communication channels): One, they are publically visible, and two, they endure.

For organization members, not only do these pages facilitate conversation – they also accelerate the speed with which people can engage in it, the number of people who can take part in it, and its potential impact (both the immediate impact, and long-term one). For researchers, this allows unparalleled access to huge volumes of organizational discussion.

I was able to track how individual sensemaking efforts turn into interacts, using a mechanism of questions and answers over online discussion pages. People thus engage in a collective sensemaking process. I offer that a prototype of sensemaking - *committed interpretation* [27] can help us understand collective sensemaking processes in Wikipedia, and account for structurational activity that includes the construction of social structures; their ongoing transformation over time; and some trends of stabilization over time.

Interacts between people often become binding, and Wikipedia's discussion environment is especially conducive for creating social commitments, because participation in interaction is volitional, and because discussion pages remain publicly accessible.

While people do not always share meanings and interpretations, they can – and do – achieve temporary, partial interpretations that satisfy their needs, and to which they can commit. Those then become reified on the official policy page, and they stay so, so long as no challenger has managed to convince the majority of those who care that they need to be changed or removed.

This paper makes several contributions to the literatures of organizational studies, computer-supported-collaborative work, and Wikipedia.

To the literature of organizational science (in particular, sensemaking) it contributes an empirical account that grounds the idea of committed interpretation, which I believe to be the first that does so in a radically distributed, open, web-based organization. Weick notes that "*We already know that many current ideas about sensemaking assume vertical hierarchies (e.g. uncertainty is absorbed as communications flow upward). What we need to know is what happens to sensemaking when this assumption is replaced by the assumption that structuring unfolds laterally, more like the networks of conversation Winograd and Flores mentioned?*" [26].

At least in the case I have analyzed, the process model of committed interpretation seems to hold, and I found it helpful for understanding and explaining the phenomena. In fact, as discussed above, the wiki environment amplifies the publicity and irrevocability of volitional interacts, and thus

intensifies the process of turning them to commitments. Therefore, it seems plausible that the model would hold for other wiki-based communities. As organizations gradually adopt social software platforms, widely-visible and virtually-permanently accessible communications are likely to become more prevalent, and there is reason therefore to believe that the model presented here will be useful for understanding them as well.

By tracking this collective sensemaking process, I was also able to offer how links are formed between individual and social cognitions, and provide empirical evidence of the way committed interpretation and collective sensemaking relate to structuration.

To the literature of Wikipedia in particular, and to CSCW in general, this paper contributes a sensemaking perspective on the processes of structuring of Wikipedia's bureaucracy, and a process model of regulation and change, based on the conceptual model of committed-interpretation. This modeling helps us propose explanation for structural activity that includes several, seemingly unrelated phenomena, including the growth in policy citation counts over time [3], and the process of how social structures (e.g. policies) get enacted and changed within Wikipedia.

I believe this perspective of collective-sensemaking, and the concept of committed-interpretation should prove useful for studying structural process in other related settings including heavily distributed organizations and online communities.

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