

## **Ethnomethodology as an Influence on Community-Centred Design**

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**Abstract:** Social norms are integral to the success of online communities. This success is predicated on social norms reinforcing accepted community behaviour, marshalling effective communication and, from a semiotic perspective, providing a foundation for the interpretation of signs. Accepting Stamper's ontological position, we propose ethnomethodology as a theoretical basis for community-centred design. Ethnomethodology is the study of social order and has over the last decade gained much currency as a precursor to technology innovation. The only assumption underlying ethnomethodology is that social order is concrete and observable. Thus, social visualisations, that draw inspiration from ethnomethodology, are proposed as means to render social order accountable. Through reflection, the community is enabled to observe ongoing social processes and activate policy decisions accordingly. This socio-technical framework conceives of the community and supporting infrastructure as a complete information system. Finally, we present the Community Management Framework (CMF), a system, which encourages self-management through ongoing reflection and community-based policy management (CBPM).

**Keywords:** ethnomethodology, social norms, self-organising communities, policy, organisational semiotics, community management framework, pragmatic web

**Categories:** H.4.3, H.5.3, J.4

### **1 Introduction**

Social norms play an integral role in the proliferation of self-organising online communities. Social norms not only marshal everyday social interaction but also coordinate and regulate ongoing group activity. In this context, the evolution of social norms has been acknowledged as a more successful approach to cooperation than the imposition of external rules [Ostrom, 2000]. This in turn suggests that the very genesis of effective, highly refined policy can be found in the emergence and continued evolution of social norms. Similarly, more formal, hierarchical organisations increasingly highlight the importance of social norms to help generate and sustain social capital. Social capital is central to effective communication and is crucial in the pursuit of knowledge sharing. This has led to calls for increased 'info-

culture analysis', which describes tacit knowledge embedded in social relationships surrounding work-related tasks, in addition to more traditional analyses such as info-structure (formal rules governing social interaction) and infra-structure (hardware and software tools that enable communication) [Huysman and Wulf, 2006]. In this regards, Stamper's semiotic ladder provides a framework to help determine knowledge and meaning within an organisation. The uppermost layers, semantic, pragmatic and social world, are concerned with signs and their corresponding meaning when situated within a social context [Stamper et al., 2000]. Stamper maintains norms and signs are inseparable. Social norms provide us with the foundation to interpret, understand and ultimately act on signs. Social norms are also emergent and temporally located – they are not external to the social context in which they develop and are bound to a period of existence.

It is from this perspective that we introduce ethnomethodology as an influence on the design of community-based software. Ethnomethodology is a method of social inquiry concerned with the study of indigenous social order [Livingstone, 1987: pg:13]. As a basis of investigation, ethnomethodology is founded on the single assumption that social order is concrete and observable. Over the last decade ethnomethodology has emerged as a popular method of research in technology related disciplines. Dourish and Button, for example, have coined the term 'Technomethodology' to describe their effort to incorporate an ethnomethodological perspective into the process of design [Dourish and Button, 1998][Dourish et al., 1996]. Our concern here, however, is more related to how ethnomethodology has emerged as a theoretical basis for innovations in social software. Much of this interest stems from the work of 'social translucent' systems, which endeavour to recreate characteristics of physical environments in the virtual domain. Other methods are influenced by the success of ethnomethodology as an approach to understanding indigenous work practice and have thus encouraged the adoption of *awareness* as a core aspect of collaboration in distributed teams. A central theme to this paper, one that is reflected in the origins of ethnomethodology, is that social order, while reinforced by social norms, is not regulated by social norms. This is a key distinction between some approaches to Language Action Perspective LAP, such as the Winograd and Flores' LAP system the Coordinator, that have attempted to imbue communication with meaning by the application of categories external to the actual communication. It is our position that meaning is created and recreated in a continued reflexive process of social negotiation. Norms, unlike rules, are not something external to social interaction. Norms, in contrast, are integral to social interaction.

Firstly, we introduce ethnomethodology. Focusing on the origins of the discipline, we discuss how insights from ethnomethodology may be adopted to help understand the emergence of indigenous social norms. Secondly, we discuss the importance of norms and the impact external policy can have on self-organising communities. To ensure group cohesion and effective communication, norms, over time, may evolve into more explicit policy rules. We discuss organisational semiotics, an approach to information systems that recognises the social orientation of signs and their related meaning. Computer mediated communication has been acknowledged as a 'lean medium' [Herring, 2003] – a medium that inhibits communication due to reduced social cues. From this perspective, we present related

work that has drawn influence from aspects of ethnomethodology and is concerned with recreating the experiences of physical interaction in the virtual domain. Finally, we discuss the Community Management Framework (CMF), an approach to supporting indigenous community practices by facilitating the emergence of norms and their evolution into policies. The CMF draws on much of the work presented in this paper and is founded on the Community Based Policy Management (CBPM) system [Feeney et al., 2004]. The CBPM is a novel technology that has been developed to support the collective management of resources and organisational structure using declarative policy rules.

## 2 The Ethnomethodological Input

Ethnomethodology is the study of ‘mundane methods that are used by people to produce and manage the common, everyday activities of the everyday social world’ [Livingstone, 1987: pg:10]. Everyday activities include simple greetings, taking turns in a conversation, reaching a verdict and the formation of a queue. Ethnomethodology emerged from a study carried out by the discipline’s founder Harold Garfinkel in 1954 and led to the publication of his seminal work *studies in ethnomethodology* in 1967 [Garfinkel, 1967]. Much of his early theorizing was developed in reaction to the work of Talcott Parson his supervisor in Harvard University. In short, Parson subscribed to the belief that society was effectively rule determined, and persons in pursuing their individual interest will do so in accordance with clear explicit rules. But Garfinkel rejected this theory for two fundamental reasons: Firstly, rule governed behaviour vastly underestimates the huge complexity evident in even the most basic of social actions. Secondly, many social situations, and the action that is practiced in those situations, are not analysable by reference to clear explicit rules. Rather, Garfinkel theorised that reasoning procedures, that drew form a vast area of background, common-sense knowledge, were in fact employed to accomplish social action in many different social settings [Heritage, 1984: pg128].

Over the last decade ethnomethodology has become a popular method of research in CSCW and to a lesser extent HCI. In part, as suggested by Dourish and Button, this is due to the publication of Lucy Suchman’s widely cited book: *Plans and Situated Actions*. Ultimately influenced by Garfinkel’s work and his approach to social action in local settings, Suchman illustrates her argument with several examples carried out in laboratory settings. Her book has become one of the seminal works in the HCI literature, and has helped propel ethnomethodology into the realm of HCI [Dourish and Button, 1998]. Indeed it was from an ethnomethodological standpoint that Suchman levelled criticisms on Winograd and Flores over their approach to the Coordinator - a system developed upon speech act theory. Persons communicating through the Coordinator had to categorise their communication before they began to interact. Suchman argued that meaning or intention cannot be categorised prior to the actual interaction because, citing conversation analysis, intention and meaning only emerged through continued social negotiation and unfolding social action [Suchman, 1993]. In this way ethnomethodology as a practice, or indeed influence on design, reflects Stamper’s ontology of actualism [Stamper, 2001]. Actors, specific to a situation, generate and regenerate meaning through an ongoing process of social negotiation.

### 3 Norms, Rules and Organisational Semiotics

Social norms marshal people's behaviour in everyday social situations. The organisation that is implicit in a simple queue, for example, emerges from a consensus regarding prevailing social norms. Stamper describes norms as 'a field of force that makes members of the community tend to behave or think in a certain way' [Stamper et al., 2000]. Norms are situated within a specific culture, have a lifespan independent of their actors and impact on varying degrees of social interaction. It has been found, for instance, that actors communicating across an IRC channel will typically strive towards an ideal message schema [Goutsos, 2005]. The notion of an ideal message schema is reinforced by norms that serve to compensate for the constraints of the medium. Similarly, conversation analysis, arguably ethnomethodology's greatest contribution, has been used to study the relationship between language and the traditional idea of community [Stommel, 2008]. Norms in this context emerged in the form of discursive identities. Discursive identities draw from the work of categorical identities or situational identities and refer to roles that people implicitly assume during talk to enable and further communication. Thus norms are not regulative but constitutive of social interaction. This helps to illustrate an important distinction between norms and rules. Norms are produced endogenously. Rules, in contrast, are explicit and imposed, often externally, to govern behaviour under specific circumstances. The emergence of web 2.0, and in particular self-organising online communities, has highlighted the importance of shared culture, social norms and, in cases where the community has expanded rapidly, clear and explicit policy rules. The Wikipedia case of the *biographies of living persons* as described in [Forte and Bruckman, 2008] demonstrates how norms, taken from the physical world and applied in the virtual domain, can evolve into guidelines and, eventually through a period of open discussion, debate and arbitration, emerge as Wikipedia policy. At the same time, the problems associated with reaching consensus have resulted in the proliferation of small decentralised groups that exhibit their own norms, rules and social structure.

From an organisational semiotics perspective, norms are integral to how organisations cohere. Stamper developed MEASUR as an approach to enable the identification of norms. The underlying assumption of MEASUR is that organisations are in themselves information systems and that the norm is an effective unit of specification [Liu, 2000]. Therefore MEASUR is mostly concerned with the upper three levels of the semiotic ladder, semantics, pragmatics and social world. In the social world, Stamper divides norms into four categories, perceptual (an agreed upon way of seeing the world), cognitive (beliefs and knowledge possessed by the group), evaluative (direct the group towards common goal) and behavioural (govern acceptable group behaviour). NORMA, the knowledge representation language, was developed to support the analyst encode norms and affordances in a set of conditional statements. This is the foundation for mapping the semiotic structure of an organisation. While we agree with the basis of the semiotic ladder, our position in regards to the application of a MEASUR is very different. We maintain that rendering social order *accountable* provides the community with an opportunity to reflect upon their ongoing communication processes. Through reflection, their

performance as a community, the effectiveness of current social norms and the communication model as whole is brought into sharp relief.

#### 4 Reflecting observable social action

The notion of the web as a lean medium has encouraged researchers to create systems that emulate the sorts of interactions that people engage in physical space. Kellogg's and Erickson's work on social translucent systems, for example, has sought to bridge the gap between interacting in physical space and communicating online. The approach is informed by ethnomethodology - highlighting the importance of *awareness* and *accountability* in unfolding social situations. The properties of physical space, or properties that help marshal successful interaction in physical space, are modelled on the metaphor of a door leading into a stairwell. The introduction of a small glass window presents each co-participant with the ability to sufficiently re-orientate their actions in accordance with each other. Thus, the small glass window renders their actions visible (to each other), accountable (to each other) and develops a collective sense of awareness (neither participant will slam the door in the other's face as such an action is not in accordance with behavioural norms). In their system, the small glass window is manifested as a social proxy - a visualisation that illustrates to those participating in a social situation the presence of others in their immediate environment [Erickson and Kellogg, 2000][Kellogg et al., 2006].

Social visualisations such as Coterie [Donath, 2002] and PeopleGarden [Xiong and Donath, 1999] present a more comprehensive view of social or indeed community-based processes. Coterie, developed at MIT, visualises discussion in Internet Relay Chat. Coterie's visualisation gives user's an immediate impression of the vitality of a conversation. PeopleGarden, in contrast, adopts the metaphor of a flowering garden to visualise user participation on a message board. History and identity are established by depicting users as flowers - the more petals a flower has indicates the number of posts and the longer the stem of a flower illustrates the length of time a participant has been involved. More recently, Communication Garden has augmented the visual metaphor of PeopleGarden with more sophisticated content and behavioural analysis [Zhu and Chen, 2008].

At the same time there have been several articles published addressing awareness in relation to collaborative work [McGrath and Munro, 2003][Lederer and Heer, 2004]. Work, and in particular work as a social undertaking, has preoccupied Garfinkel's later writing as he sought to bridge ethnomethodology with work related fields. He discussed this in terms of 'the shop floor problem' or how generic descriptions of work obfuscate the actual ongoing practice employed by the worker in the workplace, i.e. the shop floor. Studies have highlighted the discrepancy between work processes - the formal, exogenous procedure expected of those operating within a particular workflow for instance - and work practice - the informal, endogenous method employed by the worker to get the job done. One study carried out by researchers at Xerox Parc illustrated how employees working in the print industry used the 'ecology of the shop floor' - the line of sight between operatives and machines - combined with their knowledge of the print process, their knowledge of the machines and their knowledge of each other's work loads to support ad hoc cooperation [Bowers et al., 1995]. Distributed teams, however, do not share a

common work environment. And it is often the environment that provides the necessary social cues and other points of orientation crucial to efficient collaborative work. From this perspective, awareness in collaborative systems has focused on sharing social information and on highlighting the concept of shared cognition as part of collaboration. Shared cognition is important so that the user operating in a collaborative environment understands their position and corresponding relationships in context of a broader social system [Leinonen et al., 2005].

## 5 Discussion: The Community Management Framework

The Community Management Framework (CMF) is designed to support the progressive self-management of communities. The framework is founded on the principles of decentralised, self-management – management decision-making should be conducted in a collective, participative manner free of centralised control by a single member. For this to occur, however, we require a method for the community to reflect upon community-based processes, including the emergence of social norms, the creation and sharing of knowledge and the development of shared vocabularies, and to activate policy decisions according to an agreed upon consensus. This represents an approach to community management and the formation of policy that is participatory, evolutionary and non-prescriptive. The first image in Figure 1 illustrates a community feedback mechanism (as envisioned by the authors) that draws influence from the social visualisations discussed earlier. The second image is a screen-shot of policy formation in the Community Based Policy Management (CBPM) system a novel and functioning component of the CMF. CBPM was developed in reaction to rigid organisational models that adapt poorly to organisational change. The system enables management rules to be administered in a flexible group-based organisational model [Lewis et al., 2009].

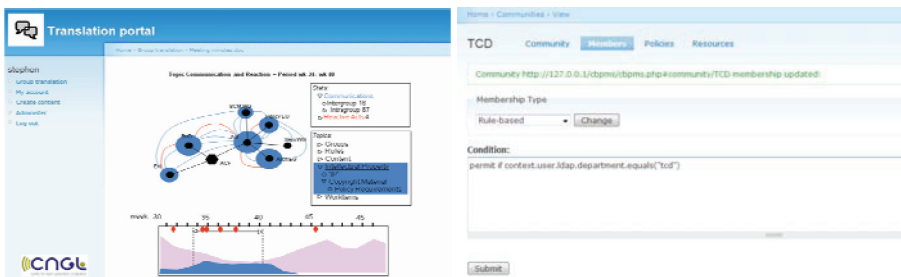


Figure 1: On the left is a mock-up illustrating topic formation and group activity in an online discussion group. The bottom visualisation depicts the relationship between conversation and related group activity on a temporal basis. On the right is a screen-shot illustrating rule formation in the CBPM system.

In accordance with semiotic theory, the CMF will treat policies as signals between decision makers and others in the community. This approach is self-reinforcing in that policies will provide the de facto model of norms which, when

combined with lightweight techniques for capturing community semantics and used in the semiotic analysis of self-reported problems, will increase the usefulness of, and thus the commitment to, explicit policy modelling by the community.

## 6 Conclusions

In this paper we presented ethnomethodology as an influence to the design of community based software. Ethnomethodology is concerned with the study of social order, however unlike other approaches to sociology, ethnomethodology does not prescribe to the notion of rule-governed behaviour. Thus, social order is indigenous, and norms are foundational, reflexive and endogenous. Stamper's semiotic ladder introduces norms as an embodiment of the organisation. They are emergent, often temporary yet provide a means to interpret and understand signs within a social context. In contrast, the imposition of external rules can have a negative consequence for online communities, often resulting in high attrition rates. In this context, we introduced the Community Management Framework. Drawing on ethnomethodology and semiotic theory, the CMF presents communities with a means to progressively self manage.

## 7 Future Work

There are several directions for future work. Firstly, we are extending the CMF platform with a set of novel self-management support services for progressively capturing community norms, operational rules and other organisational knowledge. This work presents an opportunity to assess the role of social visualisations on group decision-making, while also producing a need to operationalise social processes in a way that is conducive to quantitative analysis. Methods such as Social Network Analysis (SNA) may prove valuable in this respect. Secondly, the application of the CMF enables communities to *reflexively self-manage* as they observe their own management behaviour and generalise from previous outcomes to propose new theories for improving management strategies. This research involves designing appropriate mechanisms for reporting and analysing problems within a semiotic framework and assessing its effectiveness in supporting improvement in the operation of online communities. We intend to conduct several longitudinal studies to assess the impact of the CMF on community engagement, self-organisation and viability.

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