Gendered Patterns of Politeness
in Free/Libre Open Source Software Development

Eunyoung Moon
School of Information
University of Texas at Austin
eymoon@utexas.edu

Abstract
In this paper, a qualitative case study of women-dominated Free/Libre Open Source Software (FLOSS) project is conducted to explore factors which successfully involve and sustain women FLOSS participants by drawing on Brown and Levinson’s politeness theory. The culture and norms of FLOSS appear to be formulated by what is privileged/marginalized by men in the context of FLOSS, and such men’s valuing is likely to threaten women FLOSS participants’ face.

Our findings are 1) in the FLOSS context, there are gender-based differences in determining what threatens face on the basis of gendered expectations of what is polite, and 2) women-dominated FLOSS participants are “practically” polite in software development practices. These findings were explored through an in-depth analysis of interaction episodes on the email list, archival public interview data of women FLOSS developers, FLOSS development environment, and instructive materials shared in public. Our paper shows how politeness theory can be extended to the “practice” of coding and non-coding work, and provides FLOSS communities with guidelines for involving and sustaining women participants in FLOSS development.

1. Introduction

Free/Libre open source software (FLOSS) is software developed by self-organizing distributed teams [5], and is available for modification by anyone, and is obtainable for free [32]. Thus, FLOSS projects are likely to accept anyone interested in FLOSS development and thus, have diversity of FLOSS participants. However, prior surveys have looked at FLOSS projects do not have much diversity, and it was found that approximately 98% of participants are men [29]. This shows that significantly fewer women are participate in FLOSS development. According to [24], diverse teams with higher levels of openness to experience show better performance than diverse teams with lower levels of openness to experience [8]. Thus, the extremely skewed composition of FLOSS participants in terms of gender can become problematic in the success of FLOSS projects with the lack of understanding of diverse users’ requirements. This is because in most cases FLOSS participants come from its users those who participate in mailing lists, request new features, and provide bug reports, and join in FLOSS projects. That is, FLOSS participants are a subset of its user [13].

According to [29], different conversational styles between men and women account for under-represented women’s participation. While “flaming” is accepted as a key means of developing reputation in FLOSS, it discourage women from participation since women have a shorter history in computing so that women are less confident in defending themselves in terms of technical grounds and women are less likely to be familiar with FLOSS community and its norms. That is, as Herring [19-21] claimed, “Politeness is one common means through which gender is cued in computer-mediated communication”, gendered patterns of politeness seem to account for under-represented women FLOSS participants since FLOSS projects are coordinated primarily by means of computer-mediated communication.

While researchers mainly looked at linguistic politeness, this paper rather explores non-linguistic (“doing”) politeness in software development. This is because the survival in FLOSS projects mainly depends on contribution-based reputation, for example, providing bug fixes and creating new features. Thus, we intend to investigate further gendered patterns of non-linguistic politeness in terms of the “practice” of coding and non-coding work during FLOSS development processes in order
to identify factors which successfully involve and sustain women FLOSS participants.

In the following sections of the paper, we first review politeness theory as theoretical background, and then present an in-depth analysis of a women-dominated FLOSS project. The analysis is conducted through an interpretive analysis of interaction episodes on email list, archival public interview data of women developers, development environment, and instructive materials shared in public. In the last section, we discuss the implications and some recommendations to successfully involve and retain women FLOSS participants’ contribution, and conclude by suggesting future work.

2. Politeness theory and Gender

Brown and Levinson [1] argued the universality of politeness, and Morand [28] states politeness [1] means “phrasing things in such a way as to take into consideration the feelings of others”. Brown and Levinson’s politeness theory is derived from Erving Goffman’s dramaturgical theory of “Face” [16]. According to Goffman, face is defined as “positive social value person claim”, and face is an individual’s “public identity”. Thus, as Morand explains [28], individuals use linguistic, behavioral, and gestural displays to present a positive self-image to the social world, and seek to be perceived as appropriately heedful and supportive of others’ performances and so on. As such, face is exposed throughout interaction and socially constructed by other’s verification. Brown and Levinson termed a set of common interactional events as “face-threatening-acts” (FTAs), and stated four types of FTA [1, pp.65-68] including expression of criticism, ridicule, and raising of dangerously emotional, or divisive topics.

That is, Brown and Levinson [1] focuses on taking account of the feelings of others, showing respect, esteem for the face of others, while Goffman emphasizes more maintaining individual’s own face. Accordingly, politeness and bolstering individual’s own face are fundamental to the collaboration in that individual’s social, affiliative needs are embedded in the context of cooperation. In developing FLOSS (i.e., extremely geographically distributed collaboration), such politeness is a key element to lead to the success of FLOSS projects. However, the survival in FLOSS projects mainly depends on contribution-based reputation, FLOSS participants are less likely to take account of the feelings of others or show respect, esteem for the face of others. Thus, we investigate how to involve and sustain FLOSS participants by drawing on politeness theory. Thus, we investigate how to involve and sustain FLOSS participants by drawing on politeness theory.

On the other hand, politeness theory has also been investigated from a gender-based perspective. Prior works suggest that women tend to be more linguistically polite than men [3;19;36], and women compliment and are also complimented more than men [23]. Herring [19] found that men issue bald FTAs such as unmitigated criticisms and insults, and even enjoy “flaming”, while women are more likely to thank, appreciate, and apologize, and to be upset by violations of politeness. Researchers [10] argued that why women are said to be more polite than men is women are more other-oriented, more collaborative, and more affective while men are competitive and individualistic.

3. Research Question

In the FLOSS context, gendered patterns of politeness are likely to account for the under-represented women participants. That is, flaming and the contentious messages from men participants discourage women from joining and participating in FLOSS projects. This is because men generally appear to be less concerned with politeness, and women’s concern with politeness tends to be perceived as a “waste of bandwidth” by men [20]. Accordingly, we assume gender-based differences are positively associated with significantly fewer women’s participation.

While researchers have mainly focused on linguistic politeness in FLOSS communities [29;33], we intend to extend Brown and Levinson’s politeness theory to the “practice” of coding and non-coding work, a set of activities occurring during software development processes from “non-linguistic” perspective. Though Brown and Levinson proposed politeness strategies for linguistic communication, politeness theory originated from Goffman’s “facework” and Goffman expanded it to social organization, and politeness is a precondition of collaboration. Accordingly, we assume politeness explained as “phrasing things in such a way as to take into consideration the feelings of others” [28] can be expressed non-linguistically in distributed collaboration, and we term this kind of politeness as “practical” politeness which occurs in the “practice” of coding and non-coding work during software development processes. Here, “software” is the product which should meet both functional requirements (what software should do) and non-functional requirements (how software behaves).
To understand how women FLOSS participants are “practically” polite, from Brown and Levinson’s four types of FTA, we choose 1) “blatant non-cooperation in an activity, interruption, non-attention”, and 2) use of address terms and other status-marked identifications in initial encounters” as central criteria of “practical” politeness in FLOSS development processes.

The first criterion is based on the findings that men sometimes adopt an adversarial style even in cooperative exchanges [22], and competition is an important aspect of determinant version of masculinity [3], while women are other-oriented, more attentive, and more collaborative [10] so women’s competition can be described as ‘cooperative competition’. FLOSS communities privilege contribution-based reputation so that men’s overt competition and adversarial style are likely to threaten women’s face with the feeling of blatant non-cooperation in activities. This is because such men’s valuing is less likely to be polite for women in collaborative work.

The second criterion is based on the findings [10] that men tend to justify and define their status on the basis of accomplishments, or institutional status, while women often do on the basis of overall characters, and the relationship they maintain with. FLOSS communities privilege participants demonstrating technical skills, and status is perceived only through contribution such as producing the code and providing bug fixes. Furthermore, it was reported that newcomers lurk on FLOSS projects and they are perceived by mainly their existing abilities to code [25]. That is, the culture and norms in FLOSS context clearly fit into what men privilege, while marking participants’ abilities only through existing skills in initial encounters threatens women FLOSS participants’ face, and furthermore discourage women from joining in FLOSS projects.

Accordingly, we can assume that there are gendered expectations of what is appropriate in terms of “practical” politeness. From this, we pose the research question:

How does “practical” politeness successfully involve and sustain women FLOSS participants’ interests and contributions?

In the following section, we explore a successful women-dominated FLOSS project to find answers for our research question.

4. Research Methodology

In this section, we discuss the research design, the selected project, the data collection, and analytical approach.

4.1. Research design

To find an answer for our research question, we designed a qualitative case study analysis using several types of data in one women-dominated FLOSS project. Case study is useful when a holistic, in-depth investigation is needed [39], and when the phenomenon is difficult to study outside the context in which it occurs. Gender-based differences in politeness during technological development are elusive constructs which are difficult to observe outside the specific FLOSS context. Thus, a qualitative case study is a sound methodology for investigating the dynamic and complicated relationship between participants’ joining processes and software development processes.

4.2. Project Selection

The criteria of women-dominated FLOSS projects are defined as follows [GeekFeminism1]: 1) projects have a benevolent dictator for life or equivalent technical leader who is a woman, 2) projects have a named leadership team/ foundation committee etc. that is more than 50% of women, and 3) projects have more than 50% of their patches contributed by women. It is claimed [35;37] that Dreamwidth is an exceptionally successful women-dominated FLOSS project consisting of 75% of women developers. Thus, Dreamwidth is an interesting project for observing how a women-dominated FLOSS team collaborates.

Dreamwidth is an online journal service, and is a code fork of LiveJournal which is blogging service based on open source software primarily written in Perl. Dreamwidth average 50 commits a week from over 70 unique contributors, and over half of those contributors have either never programmed in Perl or never contributed to an FLOSS project before [35]. Dreamwidth began its service in 2009. The number of registered users is 1,214,949 and the number of contributors is approximately 130 [35].

4.3. Data Description

As archival data in FLOSS projects, apart from the source and binary codes of the actual software

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http://geekfeminism.wikia.com/wiki/Geek_Feminism_Wiki
programs, developer websites, change logs, documentation, wiki, and developer communications in the form of email archives are analyzed. Having access to multiple sources of data is important to qualitative research since it enables validation of theoretical concepts [39]. Data for this study were assembled from the following sources:

1. Email messages: We collected 1,401 messages that appeared on the public mailing list between August 7, 2008, and July 16, 2009. Dreamwidth was announced on June 11, 2008 and went into open beta on April 30, 2009. Thus, messages from this period in FLOSS development allow us to know about the technological and non-technological issues discussed by participants.

2. Archival interview data: women developers participating in Dreamwidth project were interviewed in Dreamwidth Journal on May 11, 2009, and 23 women developers posted answers in public so that the data appeared in public. Since interviewees could post their answers with Dreamwidth account, and it drops the links of interviewee’s Dreamwidth journal which displays one’s profile and membership of (un) official communities for Dreamwidth participants, we could secure the status of interviewees in Dreamwidth project. This is because (un) official communities for Dreamwidth participants are listed in the official Dreamwidth Wiki, and participants can have membership only through approval. In the interview, the questions were:
   1) How did you get involved in Dreamwidth as a developer?
   2) What are you working on?
   3) What was your previous software development experience?
   4) Had you been involved in open source projects prior to this?
   5) Which open source projects, and what was your experience with them?
   6) How are you finding your experience with Dreamwidth as an open source project?
   7) What do you like about it?
   8) What do you hate, or find difficult, challenging?
   9) Any other thoughts?

This data provide us to see several constructs that cannot be captured from email interactions, such as motivations, the comparison between other FLOSS projects and Dreamwidth project in terms of collaboration and coordination.

3. Project Documentation: We collected project descriptions, instructive materials for volunteering participants from the official Dreamwidth Wiki 3. This public documentation provides us a basic and holistic understanding of the Dreamwidth project in terms of participants’ profiles, development processes, software tools used by developers, and non-development activities. The list of participants appears on Dreamwidth Wiki was used to determine the status of message posters and interviewees (e.g. developer or non-developer).

We analyzed data that appear on public interactions, however, developers also communicate in private via IRC chat or personal email. Such interactions cannot be captured in our data. However, there is a norm that almost FLOSS communities make important messages accessible to all participants so that our data contain the significant issues among Dreamwidth participants in software development.

4.4. Analytical approach

To analyze archival data, we applied a qualitative inductive approach. We started with research question and email messages and archival interview data. To understand the impact of “practical” politeness systematically, first of all, we identified, labeled the significant features on the basis of Hackman’s [17] model. Hackman’s model is presented in an Input-Process-Output framework, and thus initially the process of coding largely resulted in three foci: Inputs, Processes, and Outputs. Then, we induced relevant concepts from them on the basis of two main criteria for identifying “practical” politeness. These segments were assigned to theoretically meaningful constructs categorized by Crowston and colleagues [7]. Thus, the specific constructs resulted in: Motivation and Technology use (Inputs), Software development processes (Processes), and Popularity (Outputs). Thus, these constructs appear to relate to what “practices” ought to be done as “practical” politeness in FLOSS development, and in other words, which factors have served as tactics of “practical” politeness in the context of FLOSS development.

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2 Questions for female Dreamwidth developers
http://damned-colonial.dreamwidth.org/26119.html

3 Dreamwidth Wiki
5. Data analysis and Findings

In this section, we present our findings systematically investigated along the theoretically meaningful constructs in FLOSS contexts.

5.1. Inputs

Inputs present starting conditions of a team such as its member characteristics project characteristics, and technology use that influences how FLOSS team work.

5.1.1. Motivation at the individual level. The striking feature of FLOSS development is that developers are largely volunteers [6]. Thus, why programmers voluntarily contribute to FLOSS development has been focused by many researchers since how to attract and sustain their participation is important in volunteer organization. Researchers found that motivations are heterogeneous individual motivation, and generally motivations are categorized into two components, intrinsic and extrinsic motivations [26]. Concerning intrinsic motivation, Ryan and Deci (2000) states when intrinsically motivated, a person is moved to act for the fun or challenge entailed rather than because of external prods, pressures, or rewards. As such, in FLOSS context, enjoyment-based intrinsic motivations such as fun [14], and enjoying the work of programming itself [30] were found. On the other hand, as extrinsic motivations, Raymond (1999) argued FLOSS developers gain enhanced reputation in many eye from making high quality contributions to the project, and Lakhani and Von Hippel (2003) found career development such as enhancing future career prospects.

In the interview of women Dreamwidth developers, we also found motivations to join Dreamwidth project, and interestingly, it is categorized by the degree of experiences in FLOSS development.

In the case of experienced Dreamwidth developers, they mentioned prior collaboration ties concerning their motivations to join Dreamwidth project. This is because Dreamwidth is a code fork of LiveJournal, and Dreamwidth project was initiated by ex-staffs of LiveJournal. Thus, some LiveJournal developers were also motivated to join Dreamwidth project since they have been familiar with each other and the code of LiveJournal. As researchers [18] found, in Dreamwidth project experienced developers were motivated to join Dreamwidth based on reduced uncertainty with respect to potential difficulties in the process of collaboration and communication with other members.

On the one hand, inexperienced Dreamwidth developers’ (i.e., newcomers to FLOSS development or developers unfamiliar with programming) motivations mainly came from the match of their learning benefits since Dreamwidth lowered barriers to entry and announced official channel (#dw_kindergarten) on IRC for help and instructive materials, and listed easy to fix bugs. Such an importance of matching an individual’s motivations was found [2] and the authors claimed that individual’s decision to initiate volunteering and continue to volunteer depend on the match of an individual’s motivations to the opportunities afforded by the volunteering environment. The followings are examples from archival interview data:

I’d been vaguely wanting to learn to code for years, and never really done anything about it. I got interested in DW, and I knew they were talking and training anyone who wanted, so I rocked up in #dw_kindergarten, read about three chapters of the recommended textbook *g*, and started with a baby-dev bug.

I’ve considered getting involved in D**, but I’ve never really had the time, and the barriers to entry have always seemed quite high..... (What do you like about it?) strong acceptance that people’s available time varies at different stages, and giving whatever you can or choose to whenever you can or choose to is absolutely fine, whatever level that’s at;

Other open source projects all seemed too scary and unfriendly to new developers. There was no obvious “if you want to learn and get involved, go here”

50% of interviewees mentioned low barriers to entry in that Dreamwidth has strongly accepted inexperienced FLOSS developers. As such, lowering barriers to entry shows gender-based differences in “practical” politeness on the basis of the second criterion—use of address terms and other status-marked identifications in initial encounters”.

With interviewees’ data, it is derived that many FLOSS communities mark potential participants’
status by existing skills in initial encounter and it threatens potential women participants’ face. Furthermore, such norms impede potential women participants’ access to the projects. In contrast, Dreamwidth accepted inexperienced participants, and not judged them only through their accumulated technical skills. From this, we can see that gendered expectations of what sort of barriers to entry is appropriate in the process of involving FLOSS participants. In most cases, FLOSS communities privilege potential participants who can technically contribute to the project as soon as they join in projects, and such norms originate from men’s tendency to value status by accomplishments, or institutional status, and such norms threatens women’s face. Accordingly, lowering barriers to entry was critical for involving women FLOSS participants.

From this, we can see that Dreamwidth could involve a large pool of women FLOSS participants in that Dreamwidth met women’s expectation of what barriers to entry is appropriate in the process of involving participants.

5.1.2. Technology use. Software type tools are also “practical” politeness strategy to involve and sustain women Dreamwidth developers’ participation. In the interview conducted in Dreamwidth online journal, 33% of interviewees commented ‘Dreamhack’ was valued in the project, when asked ‘What do you like about it?’ (See Section 4.3). Dreamhack voluntarily run by Dreamwidth participant is hosted by web server per Dreamwidth developer. It means Dreamwidth developer doesn’t need to set up development and testing environments from scratch by oneself, and there is no need to have and set up one’s own web server to run source code. This is mainly because most of setup is automatically done for each Dreamwidth developer once one gets Dreamhack account since Dreamhack is provided with tuned conditions to Dreamwidth development. The following examples show women Dreamwidth developers’ comments in the interview:

In l*** project there’s no system set up to process patches from outside, and not much official support for starting up a development environment. There was too big a barrier for me to consider even setting up something so I could write a patch.

Testing environment (Dreamhacks) are freely provided, which saves developers the trouble of getting a Dreamwidth installation working and just lets them write and test code.

The Dreamhacks help—practice bicycle that’s already more or less built, that I can play around with without harming anyone else.

More practically, dreamhacks, Could I set up a dev environment? Sure, with enough ibuprofen on hand. Do I want to load a bunch of extra stuff on one of my machines, or scrape together enough 64-bit parts for a spare box? Not reeeeeally.

Dreamhack appears to be an attentive work environment for Dreamwidth developers. From the perspective of politeness theory, Dreamwidth participant is attentive and cares about other Dreamwidth developers’ face. This is because providing such an relatively comfortable work environment is a politeness strategy which considers that the half of Dreamwidth developers are newcomers to FLOSS project or not familiar with Perl programming language. Accordingly, Dreamhack saves the half of Dreamwidth developers from difficulties in setting up work environment which should be adjusted to Dreamwidth project. In addition, official support for setting up an environment helps both unexperienced developers and experienced developers in terms of acceleration of starting up project and the overall progress of project.

Accordingly, showing supportive and attentive support for others’ face, especially caring about potential troubles inexperienced developers would have, is indispensable for sustaining both experienced and inexperienced developers’ participation in Dreamwidth project. More importantly, providing already setup development environment saves newcomers or inexperienced participants from criticism about the lack of ability to setup development environment. When inexperienced participants should reveal their difficulties to setup development environment, it would expose them to experienced participants’ criticism due to the lack of existing technical skills. Furthermore, such criticism threatens inexperienced participants’ face with the feeling of blatant non-cooperation in activities. However, in the Dreamwidth project, newcomers or inexperienced participants didn’t have to reveal their
lack of technical skills to the public space, and they could avoid "face-threatening-acts" with already setup work environment. Thus, Dreamhack shows that gendered expectations exist in the "practice" of coding work in FLOSS development.

5.2. Processes

Processes represent dynamic interactions among FLOSS participants, and research on processes has focused on software development practices and social processes with FLOSS projects [7]. In this section, we mainly focus on software development practices in Dreamwidth project.

5.2.1. Software development practices. Software development process is a set of activities that leads to the production of a software product: planning, software requirement analysis, coding, testing, release, and maintenance [34], and software systems are characterized by their functionality and by their non-functionality [12]. Non-functionality is described as how the software behaves with respect to attributes such as usability (e.g., user interface issues such as accessibility and aesthetics), reliability, performance, and supportability (e.g., installability, maintainability, and testability etc.) [11]. Also, there is a unanimous consensus that non-functional requirements are important and can be critical for the success of software project [15]. Although it was found that FLOSS communities do not seem to readily adopt or practice modern software development processes [30], both functional and non-functional requirements must be taken into consideration in the development of a quality FLOSS.

Despite the importance of non-functional requirements, FLOSS projects put more emphasis on producing source code, privilege a particular set of programming skills over producing usable software. That is, in FLOSS development, non-coding work is often overlooked or considered as an afterthought within projects [29]. For example, documentation and testing are significant in software development in that documents are the only tangible way of representing the software, and documentation enables users to know how to use it and modify it. Testing gives users confidence it would work as expected. However, observations of FLOSS projects [31] show that online documentation in FLOSS communities was usually outdated, and subsequently inconsistent with current functionality or commands. That is, FLOSS developers tend to have more interests in coding than documentation or testing [13] and there are few incentives for non-coding work. This is because demonstrating technical skills helps FLOSS participants to acquire significant roles with reputation in FLOSS projects. Figure 2 [9] shows non-coding work in FLOSS projects marginalized the position of bug reports and documentation, while core developers’ position is central. That is, a privilege of technical coding activities in FLOSS development reduces the status of non-coding work.

![Figure 1. The organization of FLOSS participants (Duchneaut, 2005)](image)

Some researchers [29] suggest that many women FLOSS participants are involved in non-coding work which are treated as less technical and less valued activities. While in most cases non-developers’ work is underrated, Dreamwidth project doesn’t seem to treat those activities as less valued work. Dreamwidth has two leaders who founded the project. Email messages posted by two leaders show how non-coding work is considered. They state Dreamwidth project is in need of non-developers’ participation, and describe detailed non-coding work such as feature design, graphic design, suggestion-mining (i.e., read all of suggestions and add the proposed suggestions would fit into Dreamwidth), documentation, testing, and administration and so on.

Leader #1: This email is going to be a quick overview of what outstanding tasks we have for people who aren’t developers. All of these can be done with varying amounts of experience with computers and various computer skills.

Leader #2: The basic idea is that we need someone who is going to dive in and take point on documentation. ... There is also a lot of work to do with writing things for various pages we will be creating, i.e., explaining invite codes, payment system, etc.

Big task, important task. Help us out!
Regarding message from leader #1, members involved in developing style sheet replied to the message from leader #1 in order to give more detailed information what they’re trying to do, giving priority to user experience, and we could read a question related to suggestion-mining, and a response to it. On the other hand, with respect to leader #2’s message, three members replied respectively, as follows:

This sort of thing is very much my area of expertise/interest, and I definitely want to get involved with this. Am also happy to take initiative on this and try to set...

Testing is what I do everyday, as well as test planning and some documentation, and while I’m new here, I’d love to get involved!

I would be very willing to help out in beta testing when that phase of the site comes online. Just sort of throwing in my two cents. I’ve always wanted to beta test a journal site and really look forward to it.

These interactions show that respecting non-coding work is critical for continued non-developers’ participation. In addition to messages initiated by leaders, messages related to non-functionality, for example, color scheme, tags and hierarchy, mascot, icon, accessibility, documentation, and layout etc., were posted and discussed in mailing list.

Interviews with women Dreamwidth developers shows how they think of boundaries between developers and non-developers in the development process.

In Dreamwidth people who are writing source code and people who are designing the journal layouts are equally esteemed and I really don’t think that would be true in an average project.

One thing that seems to happen on a lot of projects is that people without a ton of tech chops get shunted off to side areas (doc, support, general cheerleading), and those areas end up as the ladies’ auxiliary. With DW, those boundaries are fluid;... there is no sense that one area is the important one.

5.3. Outputs

Outputs of FLOSS projects represent the performance of the team, and the outcomes of FLOSS implementation, and the evolution of the software and the project [7].

5.3.1. Popularity. The success of Dreamwidth as an online community platform can be determined in terms of popularity, that is, the number of registered users. This is because online community exists to enable its users to communicate with others or post users’ contents. Thus, unless online community attracts users, its existence is difficult. Accordingly, the number of registered users is a sound criteria as a measure of online community’s success. LiveJournal is based on open source software so that there are many other communities designed using the LiveJournal codebase. Thus, we compare the number of registered users of other online communities using LiveJournal codebase and that of Dreamwidth which is a code fork of LiveJournal. The statistics show that Dreamwidth appears on the top third rank when compared by the number of registered users (Table 1).

Table 1. Top three sites using LiveJournal codebase

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Year Began</th>
<th>Registered users</th>
</tr>
</thead>
<tbody>
<tr>
<td>LiveJournal</td>
<td>Original LiveJournal site</td>
<td>1999</td>
<td>26,166,366</td>
</tr>
<tr>
<td>InsaneJournal</td>
<td>Insane asylum-themed community</td>
<td>2001</td>
<td>2,598,637</td>
</tr>
<tr>
<td>Dreamwidth</td>
<td>Online journal service</td>
<td>2008</td>
<td>1,214,949</td>
</tr>
</tbody>
</table>

6. Discussion

This study has theoretical implications as well as practical implications. While a majority of studies about politeness theory have mainly focused on politeness in linguistic communication, our study shows Brown and Levison’s politeness theory [1] can be extended to the scope of practical activities (“doing”), especially FLOSS development processes. To our knowledge, no theoretical or empirical work has been done how “practical” politeness strategy can


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play an important role in FLOSS participants’ joining processes and continued participation. This work provides insight into the specific “doing” in the interactions involved in FLOSS development processes, and demonstrates that what is attentive to participants on the basis of gendered expectations of what ought to be considered as polite things.

Furthermore, our study shows how “practical” politeness involves and sustains women FLOSS participants’ contribution on the basis of researches about gendered patterns of politeness. We showed that what gendered expectations discourage or encourage women FLOSS participants to join in and contribute to the project. Based on two main criteria chosen from Brown and Levinson’s “face-threatening acts”, we showed there are significant differences between men and women in determining what threatens face. While women tend to be other-oriented, more collaborative, and more attentive, men tend to be individualistic and competitive. Men’s overt competition in FLOSS development is different from what women pursue (i.e., ‘cooperative competition’). That is, men FLOSS participants’ tendency to value new participants’ existing technical skills rather than overall characters, and to put an emphasis on overt competition in a meritocracy rather than taking care of potential troubles inexperienced women FLOSS participants would have seem to have served as factors threatening women FLOSS participants’ face. Accordingly, unlike average other FLOSS projects, women Dreamwidth participants had perceptions of FLOSS project they join in provides them (un)official support such as lowered barriers and Dreamhacks, and shows respect, esteem for both non-developers’ and developers’ face.

This paper also has practical implications for FLOSS project leaders and participants. Though researchers have examined how to attract newcomers [25], and found that prompt feedback is essential to newbies’ continued participation in FLOSS projects, this would be insufficient as a solution for newbies or inexperienced (women) participants unfamiliar with FLOSS atmosphere, norms as well as (non) coding work. For FLOSS leaders, we suggest that the success of project can be linked to attracting and sustaining participants’ interests and contributions. Leaders need to have willingness to accept a large pool of participants by lowering barriers to entry rather than impeding or denying inexperienced (women) participants’ access to resources of projects. For both FLOSS leaders and participants, our study suggests that taking attentive actions to care potential difficulties inexperienced participants would have during FLOSS development processes is needed. Furthermore, showing respect for both coding and non-coding work is required for the success of projects.

7. Conclusion

In this paper, we have shown that “practical” politeness during FLOSS development is linked to involving and sustaining women FLOSS developers and non-developers’ participation. However, this work has several limitations that suggest future research. First, our finding is based on one women-dominated FLOSS project. Our research question can be investigated in multiple different women-dominated FLOSS projects or comparison between women-dominated FLOSS projects and FLOSS projects with few women participants can be possible in order to validate gendered patterns of politeness in FLOSS context. This also originates from the limitation of case study we took as a research method.

As well, further studies could examine socialization of inexperienced FLOSS participants, based on the framework of socio-technical interaction networks. Investigating interlinked social processes and technological development processes could give insights into identifying, and analyzing patterns of social interactions, FLOSS development, and thus, finding could confirm our study.

Based on validating our study, generalized guidelines to involve a pool of potential future women FLOSS participants would be helpful to FLOSS communities. This is because FLOSS is developed by volunteers so that participation attraction and retaining participants are linked to the success of project. The findings [4] that insufficient volunteer participation caused the failure of many FLOSS projects clearly show the significance of continuous influx of volunteers. However, gender-based differences in “linguistic” and “practical” politeness in FLOSS context seem to discourage potential women FLOSS participants from joining and contribution to the projects. Thus, in addition to avoid threatening face in verbal activities, showing “practical” politeness during FLOSS development processes would be essential for the success of FLOSS projects in long-term.

8. References

[37] Roberts, K., Standing out in the crowd, presented in O'REILLY OSCON 2009.