Self-efficacy and self-esteem in a knowledge-political battle for an egalitarian epistemology in Wikipedia

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Abstract

What makes people contribute voluntarily to Wikipedia? A new qualitative empirical study uncovers new motives, publication strategies and social dynamics in Wikipedia. In addition to the motives treated in the existing scientific literature such as status through status play, altruism through ideological identification, identity through community, the analysis uncovers three other motives through theoretical probability-making and empirical demonstration.

Consequently, the following three motives must be added to the repertoire of possible motives for contributing voluntarily to Wikipedia. Firstly, the contributors experience a unique and cheap feeling of self-efficacy. They feel that they are efficient and able to handle the tasks that they take upon themselves. This feeling is caused by the fact that many types of contributions may be experienced as successful contributions, from small text corrections to authoring of complete lexicon articles. Secondly, the contributors get a unique and cheap experience of self-esteem. A feeling that their modest input has a great impact because they are contributing to the creation of a global knowledge good. Thirdly, they are motivated by the ideology that all people have something to bring to Wikipedia. This may be called an egalitarian epistemology. These three motives in combination with the motives described in the literature provide a better and more balanced answer to the above question. The case is the Danish version of Wikipedia and the qualitative survey consists of six qualitative interviews with six contributors.

1. Introduction

What is the question?

Why do people contribute voluntarily to Wikipedia when it goes against all the classic socio-scientific theories which state that people only want to contribute to free common goods if they are rewarded and lauded or if they are punished for not doing so? (Olson, 1970). If not money then what are the rewards offered by Wikipedia?

Which theory is used to answer this question?

Most researchers have answered this question by applying the theory on Wikipedia as a common good (Ciffolilli, 2003; Weber, 2004; Benkler, 2006; Shirky, 2008). However, a small group of researchers have viewed Wikipedia as either a practice community (Bryant, Forte et al., 2005; Lawler, 2005) or an ideological movement (Schroer and Hertel, 2006). This empirical study is based on the theory of Wikipedia

as a common good with the three above-mentioned supplementary motives. According to this theory, Wikipedia may be perceived as a virtual free common knowledge good with the opportunities and problems that arise when many people are collectively working to create common good in the physical as well as in the virtual world (Samuelson, 1954; Olson, 1970; Ostrom, 1994; Shirky, 2008). Here, Wikipedia is an illustrative example of social knowledge-sharing and knowledge-creation, where the contributors must rationally consider under which conditions it would be beneficial for them to contribute with what and how much to the community (Kollock, 1998; Cabrera and Cabrera, 2002). This is an individual cost-benefit calculation which is theoretically conceptualized and empirically studied as the article's explanation in the article of the voluntary contributions to Wikipedia.

2. Literature review

How is this explained in the existing literature?

The scientific literature in the field has the following different explanations for the voluntary contributions to Wikipedia:

- Ideology, altruism and idealism driving the voluntary contributors (Weber, 2004; Anthony, Smith et al., 2005; Hess and Ostrom, 2006; Schroer and Hertel, 2006; Nov, 2007; Ebersbach and Glaser, 2004);
- The hunt for social status among other contributors (Raymond, 2000; Forte and Bruckman, 2005);
- Membership of a social movement (Schroer and Hertel, 2006);
- The joy of writing(Schroer and Hertel, 2006);
- Because contributing is so easy (Aigran, 2003; Benkler, 2006);
- The joy of creating (Benkler, 2002);
- The desire to learn in a practice community and the desire to be part of the community that is Wikipedia(Wenger, 2000; Bryant, Forte et al., 2005; Lawler, 2005);
- Ego satisfaction (Anthony, Smith et al., 2005; Schroer and Hertel, 2006; Nov, 2007);
- The feeling of being an expert in a field (Anthony, Smith et al., 2005);
- Because it is fun to take part (Torvalds and Diamond, 2001; Nov, 2007).

The different explanations are included in different explanation models

To provide an answer to the question, it is necessary to start by presenting and discussing the scientific literature's take on why people contribute to Wikipedia. The different theories in literature are included in different explanation models. Firstly, there are ten different explanations in two types of explanation models: mono-causal and multi-causal explanation models.

2.1 The mono-causal explanation models

There is one isolated motive in the mono-causal explanation models. This could be formulated as people contributing to Wikipedia because they adhere to the political ideology that information should be free and available to all (Ebersbach and Glaser, 2004). However, this is not the same as saying that the contributors in this explanation model support an egalitarian epistemology where everyone has equal opportunities to create knowledge in Wikipedia. The difference is that the ideology that information must be free and available to all, as described by Ebersbach and Glaser, only concerns the democratic access to and use of the good. Here, experts continue to be in a better position than ordinary people to contribute to Wikipedia. However, in my explanation model, the contributors do support an egalitarian epistemology, which also covers the democratic production of the good. Other researchers explain the motive by saying that it is almost cost-free in the transaction-economy sense to contribute to Wikipedia (Aigran, 2003). Others have explained the voluntary contributions by describing Wikipedia or similar projects as places that provide opportunities for achieving social status among other contributors in a status game (Raymond, 2000) or promote a professional career on the labor market (Lerner and Tirole, 2002; Forte and Bruckman, 2005). Another mono-causal explanation is that the contributors do it to be part of Wikipedia as a learning community (Lawler, 2005).

Pros and cons

The strength of these mono-causal explanations is that they explain why people contribute to Wikipedia in ways that may be theoretically rendered probable and have been empirically proven in a number of different and independent studies. The weakness is, of course, that the mono-causal explanations are one-dimensional by nature.

2.2. The multi-causal explanation models

The majority of researchers believe that there are several motives behind why people contribute to Wikipedia. In these explanations, there is a common set of possible motives and explanations which are all equal. The multi-casual explanations may be grouped in the following five categories:

2.2.1. Wikipedia is the P2P production form

Firstly, the voluntary contributions to Wikipedia are explained by the fact that the Internet provides a new superior P2P production form compared to the traditional offline material production forms for common goods(Benkler, 2006). People contribute to Wikipedia because they enjoy contributing to the creation of this common good, adhere to an altruistic ideology and achieve social status among other contributors (Benkler, 2006). All motives which have historically and theoretically been able to explain contributions to a common good when the contributors are not directly rewarded financially (Marwell and Oliver, 1993). The explanation has been generalized because the motive behind contributions to Wikipedia is perceived as being identical to the motives behind all types of P2P production forms. The starting point is the theory on common goods. The premise is the minimal transaction costs of the P2P production form (Coase, 1988; Benkler, 2002).

Pros and cons

The strength of this explanation model is that both the theory of the common good and the transaction-economy perspective provide a solid theoretical basis for understanding Wikipedia. This makes it possible to understand Wikipedia on the basis of the comprehensive research into common goods. At the same time, there is no doubt that the Internet's minimal transaction-economy conditions for cooperation are pivotal for the understanding of motives and the scope for contributing to Wikipedia. The weakness is that this explanation model is formalistic and generalized theoretically deductive and unempirical. Generalized as the common abstract formula for all P2P production forms. Consequently, the explanation exaggerates the similarities between Wikipedia and other similar P2P production forms to the disregard of the differences. This means that this explanation model ignores that Wikipedia deviates from many other P2P production forms in that writing of articles and thus the motive, contrary to software programming, is not professional knowledge and a skill that may subsequently be converted to jobs and money on an existing

labor market as a signal value (Lerner and Tirole, 2002; Lee, 2003). The explanation model's lack of empiricism also excludes an object-sensitive understanding of how Wikipedia's distinct organizational form as horizontal knowledge production versus Linux's vertical knowledge production (Garcia and Steinmueller, 2003) enables more people to contribute with less organizational control and less hierarchy than with Linux. This is the same as the way in which the lexicon article as a genre and a method of broadly disseminating already known knowledge is different from programming or creating new knowledge in a particular field. The abstract basis for this explanation model excludes the required historical contextualization of how different stages in Wikipedia, the specific distribution of work and different roles depend on different motives which other researchers have proven in other explanation models (Schweik and Semenov, 2003; Anthony, Smith et al., 2005; Schroer and Hertel, 2006).

2.2.2. Wikipedia is a dynamic learning community

Secondly, the voluntary contributions to Wikipedia are explained by it being a learning community where the contributors are slowly socialized into the community (Bryant, Forte et al., 2005; Forte and Bruckman, 2005). A social process which means that the contributors change roles from being a reader, an author of individual articles and an idealistic contributor of many articles to being an administrator and solving a number of different service tasks. Here, the motive starts out as being personal recognition and later changes to ideology. This is a socially situated explanation because it is a learning community with social roles and norms which the contributors and, thus, the motives are situated in. It is also a dynamic transformative repertoire explanation model because the motives change over time as a repertoire of possibilities and are conditional on the degree of involvement and certain roles in the learning community.

Pros and cons

The strength is the varied and transformative look at how different roles, stages and work assignments mean different motives, social constructions of Wikipedia for different people over time. Unfortunately, it is not considered how the different historical stages in Wikipedia determine different motives, work assignments and roles. The weakness is that the explanation model is based on a uniform harmony perception of the culture in Wikipedia as an ahistorical and apolitical learning community (Fox, 2000; Contu and Willmott, 2003). This leads to the many actual conflicts, power structures and points of contention in Wikipedia about, for example, vandals being ignored (Pentzlod and Seidenglanz, 2006). The

explanation model may also be criticized for being teleological and evolutionary in its focus on one dominant harmonic "Wikipedia career path". This despite the fact that there are other "Wikipedia career paths" such as ceasing to contribute, becoming a vandal or staying an anonymous contributor or just contributing as a niche expert in a narrow field (Anthony, Smith et al., 2005).

2.2.3. Wikipedia contributions motivated by different social roles

Thirdly, contributions to Wikipedia are explained as being conditional upon different roles with regard to Wikipedia as a common good. Here, the large majority of contributors are motivated by achieving status and recognition, while a few anonymous contributors are motivated by their perceived joy of disseminating their expert knowledge (Anthony, Smith et al., 2005). This is the multi-role common good repertoire explanation model. The term multi-role is used because the focus is on different social roles (the socially recognized contributor versus the anonymous expert) as determining the different motives. The point is that the classic common good theory is not able to explain anonymous contributors because they are not driven by status games, the identity in the community and social recognition, as is prescribed by the theory. The fact that anonymous contributors still contribute may, according to these authors, only be explained by them being motivated by the joy of feeling like experts in a certain field. This is an independently developed motive and superficial conceptualization which is not identical to the self-efficacy and self-esteem concepts because it is specific to the anonymous experts, while the latter concepts apply to all contributors.

Pros and cons

The strength is that this is a much needed variation of the dominant common good theory because it demonstrates how the unrecognized role as an anonymous expert must be driven by other motives than the ones prescribed by the classic common good theory, such as status games and ideology. Like in the other explanation models, the weakness is that vandals as a group are not explained, and at the same time the question of whether the social role as a perceived expert is the deciding motive for all anonymous contributors in all contexts remains open.

2.2.4. Wikipedia is a social movement and work assignment

Fourthly, contributions are explained as being motivated by Wikipedia as a social movement, a community where contributing in itself is fun and a work assignment like all other assignments explained by general, political-scientific, socio-psychological or industrial-sociological models (Schroer and Hertel, 2006; Nov, 2007).

Pros and cons

The strength is the focus on the work as being motivation in itself and not least the variation of the motive discussion by including political-scientific, socio-psychological and industrial-sociological models. On the other hand, this explanation model may be criticized for being too formalistically conditional upon models that are too generalized, whereby the specific Wikipedia is ignored. For example, it is stated that people contribute to Wikipedia because in its political-scientific form it is a social movement like all others, while the ideological content of this movement is not explained. This means that cause and effect are reversed. Here, Wikipedia is a social movement expressed as an ideology, where it could just as well be the ideology expressed as a social movement. Furthermore, this perspective is biased because the many active contributors are explained at the expense of vandals or the anonymous contributors who cannot be explained separately and directly by the above theoretical models, although they must also be motivated and motivated differently than the very active and very visible contributors.

2.2.5. Wikipedia contributions have an infinite number of motives

Finally, there is the infinite common good repertoire explanation model. Here, it is only concluded that the motives are infinite in order to contribute to this common good as all other P2P models. The infinity is the actual precondition for so many people contributing voluntarily and creating the necessary critical mass in the common good (Weber, 2004).

Pros and cons

The strength is the infinity, which prevents the theory or perspectives from excluding possible motives and types of contributors. However, the infinity is also the weakness of this explanation model. It explains

everything and nothing because it is too inclusive. In addition, it is theoretically inconsistent to operationalize the infinity as an explanation, because the basis is the theory on common goods with its implicit sociologic regularities, rationalistic perception of people and thus finite mass of possible motives.

The presentation and the pros and cons discussion of the five explanation models illustrate that none of them alone will explain why people contribute voluntarily to Wikipedia. For this reason, I will now set up my own supplementary multi-causal explanation model on the basis of both the critical literature review and the results of the empirical study.

3. Method

The choice of the qualitative interview method is based on different factors: First of all, the overall design of the study as a multicase study in which the purpose of the Wikipedia study was to uncover the relational dimension of knowledge-sharing and the underlying motives. It was found that the qualitative interview was the best method to uncover this dimension. The question was why people share knowledge and therefore, the most reasonable and scientific method was to ask the respondents this question directly. Asking them directly about their motives increases the theoretical as well as conceptual validity, ensuring a direct relation between the theoretical cognitive interest in uncovering the motives underlying contributions and the operationalization of the questions asked in order for the respondents to describe them in words, i.e. a high construct validity with a clear coherence between constructs (motives underlying knowledge-sharing) and the empirical indications of this construct (why they share their knowledge). The choice of method was also based on the essential character of motives like construct in this empirical study as well as in the existing scientific literature. Motives are latent phenomena which only appear indirectly through behavior or through language as post-rationalization and self-presentation. At the same time, motives are complex in their significance, reasoning and interrelations as a simultaneous presence of several motives underlying the same action. They are holistic in the sense that it is difficult to isolate them from each other and from their context. Which means that profound and robust knowledge of these motives in its nature is qualitative and interpreted. Accordingly, many of the central motives described in scientific literature on why people contribute to Wikipedia are also qualitative concepts in the essential sense of the term such as the question of identity, status, altruism and community. The argument is that the qualitative interview is the best method to obtain descriptions of the personally experienced lifeworld as lived and interpreted in a social, historical and psychological context (Kvale,

2007). This means that the respondents can explain the background of their behavior in their own words. Therefore, the benefit of the qualitative interview is that it offers an explorative clarification of cultural, social and psychological motives with a high degree of complexity in their essence as well as their interrelations.

The empirical interview survey consisted of six qualitative interviews conducted in the spring of 2007 with one woman and five men. Each interview took about one hour. The subject of the interview was why they and others contributed voluntarily to Wikipedia. The form was a semi-structured qualitative interview with an explorative question guide, where the objective was to let the respondents tell what motivated them and others to contribute to Wikipedia. This method was chosen because the qualitative interview method and the explorative question guide are suitable for an explorative explanation of cultural, social and psychological motives (Kvale, 2007). All interviews were transcribed and then categorized and analyzed thematically. The relevant categories for coding of the qualitative interviews were how the respondents talked about motives, costs, roles, benefits, trade-offs and premises for contributing. The study's common good perspective and rationalistic perception of people were the theoretical preconception of the empirical study in both the collection, categorization and analysis stages.

3.1 Methodical reservations for the internal validity of the study

Internal validity is the question of the validity of the study. A valid study can render it probable that the demonstrated contexts and causal relations are true. A number of factors may create a difference between the survey's results and reality which means that the survey is less valid. Factors that create systematic differences and errors are called bias.

Two types of bias are typical: Selection bias where the selected persons are not representative of the universe of possible respondents and measuring bias where the object of the measurement is not adequate or correct in terms of what should and could be measured. The respondents in the study were chosen after having voluntarily responded to the invitation on the Danish version of Wikipedia. This creates self-selection bias where the voluntary respondents without doubt differ from the overall group of contributors in a number of areas. They may be more positive, involved or idealistic than the average which means that both possible motives and the relation between motives may not be uncovered. The internal validity of the survey is also limited by the fact that the respondents are all administrators. A typical and distinct group of contributors is thus overrepresented, while three other central groups of contributors are absent (the anonymous, the ordinary contributors and the vandals). This means that

there are both overrepresentation and underrepresentation/non-respondent biases. It has been attempted to compensate for these biases through the methodical design by including a broad question of which motives they as administrators and others have for contributing to Wikipedia. For this reason, the other three groups of contributors and their motives indirectly feature as introspectively experienced by a group of administrators. Here, the premise is that the administrators may say something meaningful about the other participants' motives, even though these are latent phenomena. This respondent and measuring bias means that when interpreting the results of the survey, account must be taken of the fact that administrators have a greater tendency than other people to perceive Wikipedia as a community and an ideology. This probably means that the results are biased towards the motives that according to other surveys drive administrators more than other groups. This may meta-analytically from other studies featuring administrators in Wikipedia be perceived as a possible overestimation of the significance of recognition and status among other contributors, ideological belief, altruism, the sense of community with other contributors and social identity through contributions (Bryant, Forte et al., 2005; Forte and Bruckman, 2005; Lawler, 2005; Schroer and Hertel, 2006). Another possible measuring bias is expectation bias where the researcher instinctively seeks to confirm the theory in a question guide, the actual interview and the analysis. Here is a potential risk of making methodical choices based on the theoretical preconception which means that data material, empirical analyses and categorizations inevitably reproduce the theoretical perspective in a self-corroborating circle (Bjerg and Villadsen, 2006: 76). The risk of this is quite significant when the study has a theoretical and reductive financial perspective as clear as can be seen here. To minimize this risk, I have initially used an open coding as well as an axial coding of the data material in the analysis to avoid a theoretically deductive control of the study. Also, I attempt to be self-reflexive and critical in terms of the epistemological premises and theory of the study. At the same time, I use a selective coding of the data material in relation to competing motive explanations to ensure the theoretical plurality in the analysis phase.

3.2 Methodical reservations for the external validity of the study

External validity is the question of the conditions for generalizing from the study to other contexts, phenomena or theories, i.e. the extent to which the study can be said to be representative in general. Six qualitative interviews is a very small number of interviews. Of course, this raises doubt as to the external validity of the results of the study. It is a question of representativeness which is not reduced by the overrepresentation of a certain group of contributors. The question is whether all motives can be

uncovered representatively. The only argument here is that this qualitative study does not use large representative groups but actively uses a non-representative group of administrators such as experts and informants as it is assumed that they have a potentially representative overview of possible motives. Once again, this study is inspired by Corbin & Strauss' alternative qualitative definition of representativeness (Corbin and Strauss, 1990). For them and in this study, representativeness is defined as the significance of a representative overview of the generative conditions such as motives that trigger a phenomenon. This is a listing of the actions, interactions and varying effects that may have the same results. Where the result is a contribution to Wikipedia and the motives found in the analyses form a representative overview of the possible motives communicated by persons with a representative overview. This is a qualitative study and a case with the same essential methodical limitations regarding external validity as all other qualitative studies. This is therefore not a generalization in a strictly valid sense but merely a probable analytical generalization from the case and from a qualitative study for new probable causal contexts. The study essentially confirms the motives that the existing literature has already uncovered. On the other hand, the supplementary motives and variations have been proven empirically and theoretically rendered probable in similar P2P phenomena or in other social phenomena in other contexts. The perception of self-efficacy and self-esteem are thus theoretically consistent and well-founded concepts from the cognitive psychology (Bandura, 1997). They have both been found in empirical studies of knowledge-sharing in virtual practice communities (Wasko and Faraj, 2000; Wasko and Faraj, 2005). The meaning of historical stages and roles has been demonstrated in empirical studies of P2P phenomena (Schweik and Semenov, 2003). On the other hand, the egalitarian epistemology and the knowledge-political fight against the expert dominion have been theoretically discussed by Lyotard, Gibbons and the founder of Wikipedia, Larry Sanger (Lyotard, 1984; Gibbons, Limoger et al., 1994; Sanger, 2007). This strengthens the external validity from my rational choice perspective without the study being externally valid in the strict sense, because it is a qualitative study with the same essential methodical limitations regarding external validity as all other qualitative studies. These methodical reservations in relation to the external and the internal validity as well as the described biases clearly show that the qualitative interview has a somewhat unresolved scientific theoretical status despite its prevalence. In relation to the classical terms like validity, reliability and construct validity, there are conflicting and competing interpretations (Denzin and Lincoln, 2005). On the other hand, reliability is such a problematic and unsolvable term in qualitative research interviews that it is hardly discussed (Kruuse, 1989). Furthermore, construct validity is a very vague and ambiguous term when you study dynamic, contextual and interpreting significance creation which is the essence of qualitative studies. As measurements are not based on clearly defined and objective variables in the qualitative interview, construct validity becomes a question of interpretation. In this study, it has been

decided to use a strict definition of construct validity as a question of semantic agreement. This is a simplification, as there are without doubt different meanings and interpretations of what a motive is and how. Illustrated using the theoretically unsolvable problem from this study as to how you ascertain whether the same motive is present, important and relevant to various people. Overall, my conclusion is that the validity of the qualitative study must be seen contextually as communicative as well as pragmatic validity (Kvale, 1989). Communicative means that the study is valid if other researchers see it as valid when the method of the study is explicated. The study is pragmatically valid, as it produces the result which is the purpose of the study (Kvale, 1989). The study gives us information about what motivates people to contribute to Wikipedia and why people are motivated to share their knowledge. This makes the method pragmatically valid, as it renders action possible and has real consequences. As Kvale says about pragmatic validity in qualitative studies:

"*Pragmatic validation is verification in the literal sense, "to make true". The effectiveness of our knowledge belief is demonstrated by the effectiveness of our action. Knowledge is action rather than observation. To pragmatists, truth is whatever assist us to take actions that produce the desired results*" (Kvale, 1989: 86).

4. RESULTS

4.1 Which explanation model is demonstrated by the study?

The motives for contributing are different social and personal rewards realized by contributing voluntarily. The motives are more or less present as a repertoire in the individual contributors. The explanation model uncovered in this study is, thus, multi-causal and dynamic, focusing on different roles, work assignments and historical stages. Multi-causal because several causes and motives are present at the same time in this repertoire. Dynamic and historical because what is considered the most important motive for the individual contributor is determined and activated by different historical and contextual conditions in Wikipedia. It is conditional on roles and work assignments because the study shows that different social roles and work assignments in Wikipedia determine the importance of different motives. The relationship between the different motives is thus not constant but dynamic, because the project, the contributors, the roles, the work assignments and thus the importance of the motives change over time.

4.2 How can the study's explanation model be related to the existing explanation models?

The study's explanation model may, subject to the methodical reservations, be related to the existing explanation models in the following ways:

- It invalidates all mono-causal explanations, because the study uncovers several causes and motives at the same time.
- It invalidates the first explanation that Wikipedia and the motives behind Wikipedia may only be perceived in a generalized way as an example of P2P production forms. The basis for this is that the study shows that the motives are conditional on specific contextual and historical conditions regarding Wikipedia which do not apply to all other P2P phenomena.
- It invalidates the second explanation that Wikipedia and the motives behind Wikipedia may only be explained as a learning community with a teleological and evolutionary role dynamic. The reason for this is that the study shows that the role as a niche expert in a narrow field is vital and not necessarily teleologically a part of the career path towards becoming an administrator for everyone.
- It confirms and varies the third explanation that different roles determine why some people contribute. This variation includes giving prominence to both the anonymous and the not anonymous niche expert as a central role and as the optimal and most rational strategy for contributing.
- It confirms and incorporates the fourth explanation model on Wikipedia as a social movement, perceived efficacy and a work assignment. This is because the ideology of the social model is explained in its content as a knowledge-political fight for an egalitarian epistemology. In addition, the perceived efficacy is reinterpreted as self-efficacy, and the concept of self-esteem is added. On the other hand, my study shows that different work assignments have different motives.
- It invalidates the fifth explanation model on Wikipedia being infinitely motivated. This is due to the study's theoretical common good basis and the fact that it empirically confirms the same infinite amount of motives across different studies and people in the study.

4.3 Which motives are demonstrated by the study?

The respondents have the following motives as a common repertoire for contributing to Wikipedia. They ideologically support the project of making information available to all. They want to create a free common digital good for the benefit of everyone who can and should contribute. The respondents want to be of use and perceive contributing as an opportunity to learn more. They do it because they feel that they are part of a community and a social movement. They feel that they are recognized by others and achieve social status. They also contribute because it is fun, they enjoy creating and it is very easy to do so.

The three supplementary motives and the three variations in my new explanation model

Consequently, the study demonstrates and confirms some of the motives found in the analysis of the existing scientific literature and invalidates some of the explanation models applied. In addition, the study demonstrates the three supplementary motives of self-efficacy, self-esteem and the fight for an egalitarian epistemology. Also, the study uncovers three variations regarding the weighting of the motives, where historical stages, social roles and the character of the work assignment are vital. The three supplementary motives and the three variations have thus been incorporated into my new explanation model

Supplementary motive no. 1: Motivated by Wikipedia providing a cheap experience of self-efficacy

The study shows that the respondents are motivated by an experience of personal efficacy through the experience of a job well done. This may be explained from a cognitive psychological perspective by the concept of self-efficacy (Bandura, 1997). Wikipedia is perceived as a unique medium for self-efficacy because many types of contributions may be defined in a flexible and cheap manner as self-perceived success on the project's own terms. This is expressed in the following way:

"There is something numbingly good in doing such assignments that are easy to manage because you only take on what you can handle. This gives you a feeling of satisfaction. It is like when I as a gardener start trimming a bush. It is gratifying for me when I can look at that bush and say: 'Yes, it is done - now it is better than it was when I started'. This is really, really satisfying – the point about a job well done… and slowly you get used to it being really nice when you get there – so that is what you are constantly trying to achieve".

Wikipedia more so than other P2P production forms provide an opportunity to adapt your effort to what, when and how. This is due to the fact that the individual articles and their quality are not sequentially conditional on each other in a vertical knowledge codification or depend on comprehensive coordination as in the programming of operating systems (Garcia and Steinmueller, 2003). This provides an unprecedented scope for adapting the potential work assignments to ensure that everyone can contribute at their level and feel like useful contributors. This includes both the person who only wants to correct a small fact in an article and the person who wants to write a new article. The study shows that everyone can feel that they have made a successful contribution, regardless of whether they have only made small corrections or written a new article, because the idea is that this must take the form of collaboration

between many co-authors. This means that people at different levels define and legitimize their own contributions as being good. It is significant that even unfinished and incomplete work assignments may be perceived as a success. For example, the respondents feel that they can start writing an article and then stop after a while, without perceiving this as a defeat, because the ideology and the genre contract imply that giving up and the unfinished are objectives of the project and not a problem. This provides a comprehensive and unique "cheap" perception of self-efficacy as a motive.

Supplementary motive no. 2: Motivated by Wikipedia providing an experience of self-esteem

What is unique about Wikipedia compared to other P2P phenomena is that recognition of the general project in the abstract sense is not distributed or diluted in a hierarchical structure, despite the fact that people contribute at different levels and with different degrees of intensity. For this reason, everyone may be self-confident and feel like important contributors in a global common good with importance for civilization history. That you have a positive effect on society according to yourself. As expressed by one of the respondents:

" – well, it is this feeling that you are part of something or that you have given a part of yourself to something huge, and that it lives on, hopefully after I'm gone. I believe that is what it is… I mean that you create a memorial for yourself in some way by being a part of Wikipedia – only if you are just a very small part, but still a part".

The study thus shows that Wikipedia is also a unique medium for the generation of self-esteem. Self-esteem is a personal perception that you recognize yourself for your contribution to society when no one else does. The concept of self-esteem is related to self-efficacy. The difference is that self-efficacy is the cognitive perception of mastering the specific work assignment relative to specific competences at the micro level, while self-esteem is the self-perception of having an effect on society and recognition at the macro level (Bandura, 1997). Most articles are written without the authors receiving any feedback on their contributions. This means that the contributors have to interpret and recognize themselves for their contributions, because no one else is. This indicates that the status game is not the only explanation, because many people feel that they are not actively recognized or achieve status from the other contributors, because they simply have not read their articles. This is expressed in the following way:

"I don't get much feedback on the articles I provide. It is actually mostly about me applauding myself and

saying: 'Yes, that actually looks ok, that looks ok'" .

The point is that Wikipedia has its own unique self-esteem equation, where contributing pays off because the benefits are great and unique. The unique in the perception of self-esteem in Wikipedia is first and foremost the timescale. With Wikipedia, in just a few minutes everyone can feel that they are recognized for their knowledge globally, if their contribution is not corrected. This is a unique benefit in a society where recognition has an entirely different and slower time economy. A second unique property is how easy it is to create self-esteem yourself. Wikipedia is thus a public system where self-esteem can be experienced. Open access has the unique benefit that indifference and ignorance in the system may easily be interpreted as passive positive recognition in its effect. For example, when the respondents have written a lexicon article, and it has not been deleted or corrected, they are to able recognize themselves despite of the silence, even though it is actually just a passive indication that other readers are indifferent or ignorant with regard to the subject. This is very important for articles with a very specific content written by a niche expert in a narrow field. In these narrow areas, it is easier to feel self-efficacy. This is exactly where the indifference and ignorance among the readers and other contributors are most pronounced, which means that the risk that the article will be corrected or deleted is low. Consequently, for these specialized articles, the possibility of having the passive positive personal experience of self-esteem is good and relatively better if your contributions to Wikipedia are not deleted or corrected. To write about narrow specialized subjects with few potential readers or co-authors is, thus, the optimal strategy if you want to achieve the highest possible benefit in the form of both self-efficacy and self-esteem with the least possible effort and risk. The people who only contribute to narrow articles will still feel as contributors to this common good, only with lower risk of non-approval. This means that many people stop contributing when they are no longer able to apply the optimal strategy of writing articles in narrow fields. One of the respondents had the following to say about the optimal strategy versus the broad strategy:

"I have noticed that for several of the people who have contributed but have now stopped, when their main subject runs dry, they don't know what to use Wikipedia for, and then they leave the community. And that is only fair, and a good thing, but I think that it often happens if you don't have the ability to focus on the communication and information part and say: Right, now my subject is exhausted, but I could maybe write about something else which I will take on".

Supplementary motive no. 3: Motivated by Wikipedia as a knowledge-political center

The study also shows that people contribute to Wikipedia because they support the idea that everyone can and should democratically be co-creators of the common knowledge in society. They believe that the good, the just and the true have been created by people in common. This may, in the abstract sense, be described as a radical egalitarian epistemology (Sanger, 2007). As one of the respondents said, everyone has something to contribute, so he contributes. Wikipedia is the medium and the center for the knowledge-political movement:

"We all know different things about different things from our everyday lives and so on, and together we may not know everything, but we know a lot, while separately we don't really know that much. But if we all work together in writing this huge lexicon, it may really become the largest lexicon in the world – and I really believe that is it: That we all have a small part to contribute."

This opinion is controversial in its basic democratic idea that everyone has something to contribute on equal terms. Controversial because the Wikipedia concept and the underlying ideology not only to challenge how a lexicon has traditionally been produced, but also the actual production terms and the ideals of what true knowledge is. This represents a shift in the production terms for knowledge driven by the technological democratization of the means of production to create knowledge and the marketing of knowledge in the knowledge capitalism (Lyotard, 1984; Gibbons, Limoger et al., 1994; Sanger, 2004). As illustrated by the above quote, Wikipedia may be perceived as a controversial knowledge-political movement conceived in a political fight against the expert dominion, the established knowledge institutions and the traditional perception of what knowledge is. This fight against the experts is the motivating factor. A good example is one of the respondents in the interview survey who worked at a nursery garden as a teacher despite the fact that he was not trained as a gardener. He was in no way a legitimate expert. In spite of this, he used Wikipedia to publish a number of articles on plants which he could use in his work at the nursery garden. All these texts had not been approved, and no publishing firms wanted to publish them, because he was not a legitimate expert. Here, Wikipedia became a platform for him to profile and publish the non-expert knowledge which could not be approved. This is a motive in itself.

In addition to my study uncovering new motives, it also points to three new necessary variations.

Variation no. 1: At first, it was fun. Now, it is more serious.

The first variation is related to history. The study shows that Wikipedia's different historical stages determine the importance of different motives for contributing. At first, it was an advanced signal and there was a trendsetter status in being a part of it. However, that disappeared when Wikipedia reached a critical mass in the number of contributors and articles. At the same time, Wikipedia has become more serious and specialized in recent years, because it has reached a critical mass with several qualified contributors which is very important for the quality of the articles as well as the organizational resources in the project. Similarly, the assignment tends to have changed from writing new articles to maintaining and adding to existing articles. This means that Wikipedia has become more professional, better and more serious over time with more editing. The fun and the creativity have thus become less important as motivation for everyone over time, just as creatively authoring an article from scratch is more rarely seen. On the other hand, serious and professional contributions have become a more important motive. Consequently, in different stages of Wikipedia's lifecycle, there are different problems, opportunities and not least different degrees of importance attached to the motives. As one of the respondents said about the rise of the professionals at the expense of the visionaries and the imaginative souls:

"The Danish version of Wikipedia has changed a lot. I started in 2004 when it was a place for visionaries and the imaginative souls and when everything was accepted – almost without criticism. That is gone now. Has it become a bit more dry and boring? Well, that may be argued or feared. However, it is clear that the project has changed – in addition to us changing, if that is what happens, the project has also changed. It has become far more, so to say, professionalized".
Variation no. 2: The role you play determines what the most important motive is for you

The second variation is that your role is decisive. The study shows that what is the most important motive depends on which role you play in Wikipedia. Different roles mean that different motives are more important than others. If you are an anonymous contributor, self-efficacy and self-esteem are the most important motives, and you prevent yourself from receiving social recognition from other contributors. If you are a non-anonymous niche expert in a narrow field and the administrator, what is most important is recognition in your field or the social recognition for your contribution to the community. The reverse applies to the vandals who view challenging and overstepping the social norms as the most important motive in itself.

Variation no. 3: The assignment you solve determines what the most important motive is for you

The third variation is that work assignments are also important. The study shows that different work assignments are connected to different motives. Some assignments are more conspicuous and less boring than others. It may thus not be concluded that all assignments have the same motive. If you write most of an article, it will give you a feeling of self-efficacy and self-esteem, because many people can read the fruit of your labor and take credit. Here, self-efficacy and self-esteem are the most important motives. While other assignments such as correcting spelling mistakes, reviewing articles to protect against vandals and settling copyright rules for pictures provide less self-esteem but the same feeling of self-efficacy, because they are routine assignments that every administrator is potentially able to solve. This requires a higher degree of ideological identification with the project, altruism and tolerance to boring assignments. Here, you only get recognition from the small group of administrators who are also occupied with these assignments. This means that you must feel that their social recognition is important in order to feel that you get something in return. This illustrates that different motives have different degrees of importance as a function of different work assignments depending on the different roles as either an author or an administrator. Consequently, it is necessary to take a look at the individual work assignments in order to get the full picture with regard to what motivates whom, when and how for specific work assignments.

5. Conclusion

Why do people contribute voluntarily to Wikipedia? The answer is that they do it to achieve status, feel that they are part of the community, for political reasons, for identity, learning, joy of creating and because it is fun it itself. They do it because they believe in the ideology of a common free virtual knowledge good and fight for an egalitarian epistemology. They do it because it gives them a unique and cheap feeling of self-efficacy and self-esteem. Which of these motives is most important, when and how, depends on the different historical stages, social roles and work assignments in Wikipedia. The optimal strategy for realizing most of these benefits with the lowest possible risk and smallest possible investment is by writing articles on narrow subjects with few readers as a niche expert. That is why we have Wikipedia.

Table 1: Overview of the seven different explanations why people contribute voluntarily to Wikipedia in this study

	This study	Mono-causal explanations	P2P	Situated learning	Determined by role	Social movement work	Infinite motives
Typical Authors		(Aigran, 2003)	(Benkler, 2006)	(Bryant, Forte, & Bruckman, 2005)	(Anthony, Smith, & Williamson, 2005)	(Nov, 2007; Schroer & hertel, 2006)	(Weber, 2004)
Status in this study		invalidated	invalidated	invalidated	partly confirmed	partly confirmed	invalidated
Motive	free information ideology ease status identity self-efficacy self-esteem egalitarian epistemology	free information ideology ease status identity	ease status ideology joy of work	status ideology identity learning	ideology altruism status joy of disseminating	status ideology joy of work	all inclusive
Explanation Model	multi-causal historical role determined by work assignment	mono-causal	multi-causal generalized deductive	multi-causal socially situated	multi-causal determined by role	multi-causal politological industrial-sociological socio-psychological determined by model	multi-causal infinite
Pro	deductive inductive empirically reasoned	relevant	theoretically based	dynamic	multi-role perspective	different theoretical perspectives concurrently	comprehensive
Con	administrator bias	one-dimensional	formalistic generalized not only P2P	apolitical evolutionary teleological	joy of disseminating	formalistic causality generalized	theoretically inconsistent

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