

File-Sharing Relationships – conflicts of interest in online gift-giving

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Abstract. This paper suggests a relationship model for describing, analyzing and foreseeing conflicts of interest in file-sharing networks. The model includes levels of relationship ranging from the individual (ego), to the small group of close peers (micro), to a larger network of acquaintances (meso) to the anonymous larger network (macro). It is argued that an important focal point for analysis of cooperation and conflict is situated in the relations between these levels. Three examples of conflicts from a studied file-sharing network are presented. Finally, the relationship model is discussed in terms of applicability to other domains, recreational as well as professional.

Introduction and Background

File-sharing applications, services, communities and networks have become increasingly popular during the past few years. Using digital media, computer networking, and computer-mediated communication to transfer digital goods is now an important part of many peoples' lives. File-sharing is a contended practice and powerful actors (e.g. record companies etc.) are doing their best to suppress it. General attention has been directed towards the dubious nature of sharing services and user behavior (free-riding, copyright infringement et c). Our position here is however that there is little doubt that many users find the act of *sharing* fulfilling in itself. While certain ideologically motivated activities that are part of the current file-sharing culture (Giesler & Pohlmann, 2002) – such as “making stuff generally available” – violates current laws and various rights of ownership and redistribution it's hardly the main motivation for most users. This suggests an

opportunity for exploring file-sharing networks on a level which is not directed towards "overthrowing the existing market system", but rather as the base for services and applications with general social utility and suitable for non-recreational contexts. For us, the interest is in the aspects of sharing where it seems viable that we can develop technologies that meet both consumer and commercial concerns.

The public image of online file-sharing is almost always framed as if it is a way for people to get access to goods and download free material. The corresponding assumption for many is that the only thing that motivates users of file-sharing applications is the act of getting or receiving digital goods. Thus, the focus of much commercial development of file-sharing technologies is on finding ways to make access to digital media legal, easy and economically viable. In other words, technical development circles around improving downloading (or "getting") aspects of file-sharing technologies. However, to accentuate another – and to certain extent opposing view – we start by providing a definition of the verb "share" (from Wordnet 2.0):

- 1: have in common
- 2: use jointly or in common
- 3: have, give, or receive a share of
- 4: give out as one's portion or share
- 5: communicate

Even though the definition of sharing above suggests an important "giving"-dimension, much scholarly work has been directed only towards the needs and structures of "getting" or downloading. However, within the online file-sharing networks there are of course also users who *provide* material – in fact, the activity of *giving* is a fundamental aspect of file-sharing networks. Some studies (Adar & Huberman, 2000; Golle et al., 2001) show that a small percentage of the population of a file-sharing network provide a major part of the available digital goods. More recent studies claim that this is not necessarily the case (Parker, 2004). Whether the average user is a provider of files or not, there is no question that much digital goods is uploaded, or given away, in file-sharing networks. We therefore suggest, unlike many other researchers (Feldman et al., 2004; Golle et al., 2001), that focus should not exclusively be put on trying to solve potential problems that stem from "getting" behavior, but also in attempting to understand, facilitate and encourage "giving" behavior. More specifically, the task should in terms of file-sharing not only be one of preventing "free-riding" and "leeching" behavior, but also in trying to thoroughly examine and understand what makes gifting worthwhile for the, sometimes few and seemingly altruistic individuals who constitute the backbone of a file-sharing network. After having gained a better understanding of the motivation of such individuals, the next logical step would be to develop "gifting technologies" (McGee & Skågeby, 2004) by

describing suitable norms or design principles of robust file-sharing networks, or, features that could be incorporated directly into software that would encourage and simplify “giving” behavior in file-sharing networks. We are of course not suggesting that self-interest is not part of file-sharing behavior, but current interpretations almost exclusively emphasize self-interest at the detriment of all other types of motivation where we feel that the development of software features which leverages “gifting” is a necessary complement to features solely directed towards limiting or stopping “getting”.

We naturally take into account that there are users who do not give at all, or who give only in order to receive. We also have to take into account that there are other users who grant access but do not even know that they are doing so or what they are granting access to. Still, there are also users knowingly and willingly give/grant access and whose behavior cannot easily be explained in terms of exchange or trade. A profound question is: what is it that motivates and makes people give (i.e. produce public goods) in the context of file-sharing instead of succumbing to the temptation of over-use and deplete limited public goods, i.e. the well-know “tragedy of the commons” (Hardin, 1968). It is clear that these users act on *other* motivations than pure self-interest, motivations we know surprisingly little about.

There are many different aspects to file-sharing; technical, legal and social are the most apparent and they have all received much public and academic attention (see (Iamnitchi et al., 2004; Lui & Kwok, 2002; Premkumar, 2003) for examples). Social studies of file-sharing have looked at a range of phenomena at a number of different levels – from individual experiences to groups and entire file-sharing networks. The choice of a suitable unit of analysis is of course a methodological necessity. However, as individuals we act on different levels simultaneously, e.g. both as individuals and as members of various groups (small or large). This can create tensions between needs and concerns of the individual and needs and concerns of the individual-as-part-of-a-group. Such tensions between the individual rationality (acting in self-interest) and the collective rationality (acting in the interest of the group) are generally referred to as social dilemmas (Kollock, 1998; Orbell & Dawes, 1981). For an individual with “gifting needs”, self-interest is by definition something that falls out of the frame of the gift (Kolm, 2000). Still, to merely explain the needs, concerns and motivations of digital gifters as “collective interest” seems to be too much of a reduction. Our suggestion here is to refine and differentiate between three different “levels” – micro, meso and macro – of collective interest. It is in the relationship between different levels that we can identify important social patterns of conflict and cooperation. This more nuanced view of the otherwise monolithic concept “the collective interest” accordingly gives us the possibility to better represent and analyze the behavior of gifting users. As part of an ongoing study of giving behavior in file-sharing networks, we develop a model in this paper that better explains many nuances in

patterns of behavior in the relationship between gifting individuals and the larger networks they are part of.

The paper is structured as follows: we start by providing a short background on online gift-giving and social dilemmas. This is followed by a proposal for a refined model for analyzing social dilemmas in file-sharing networks. We end the paper by discussing the potential usefulness of the model in areas other than file-sharing.

Online gift-giving and Social Dilemmas

The question of what constitutes a gift or gift-giving has a long history surrounding it (see (Osteen, 2003) for an overview). There is quite a controversy about the existence or non-existence of “pure” altruistic gifts depending on how you choose to define it. It is not our intention to here participate in that philosophical debate. Rather, this research has a more pragmatic and exploratory approach in which we look for behavior that resembles altruistic gift-giving or at least behavior that is not purely self-centered.

Kolm (2000) considers the difference between self-interest and ‘other’ motivations in a general model of economic transfers (of which gift-giving is a part).

Coercion (taking)	Exchange	Reciprocity	Pure gift- giving
Self-centered motivation		Other oriented motivation	

Table 1. Four modes of economic transfer (Kolm 2000).

By contrasting these different modes of transfer, we can get a clearer picture of what gifting can be. Kolm explains the modes by stating that taking and exchange have selfish or nontruist (acting selfishly towards one agent while acting altruistically towards another) motivations while reciprocity and gift-giving are based on other-oriented motivations. One explanation lies in a general incentive structure Kolm calls the rationality of equality. The rationality of equality includes a sense of justice as well as a sense of recognition or empathy towards others.

How are the modes of transfer realized in online file-sharing networks? Someone who takes and takes but never gives is called a leech (or leecher). A leech only downloads and never uploads digital goods. Needless to say, leeches are not looked upon favorably in file-sharing networks. It is not possible to compare leeching to the mode of *coercion* (e.g. stealing or acquiring something by force) as the goods offered in file-sharing networks are offered voluntary, but it is

still clear that this sort of behavior is strongly reproachable based on the reactions it triggers. A fair amount of *exchange* takes place in file-sharing networks, that is, users who tit-for-tat trade files with each other on a “you get this if I get that” basis. These are users who are interested in keeping a strict and explicit balance between what they give and what they get. Likewise, in reciprocal gifting the obligation to give back can be strict, and so to speak form an exacting balance. However, reciprocity is about returning *gifts* and thereby has a larger degree of freedom, ambiguousness and uncertainty. In a reciprocal return of a gift there is no explicit or precise agreement. It’s concerned with treating others as you have been or wish to be treated yourself. There are certain social-psychological effects which show that people tend to give when they have been given to, even if the people who gave to them and the people they give to are not the same. Similar to that, people are more inclined to give to other givers, even if they do not give to oneself. This is often referred to as generalized reciprocity (Putnam, 1993, 2000) – meaning that we have a relation of gifting in which two transfers of gifts affects one agent but not necessarily the same other participants. In contrary to exchange, reciprocity is implicit, flexible and uncertain and it more often than not focuses on social relationships. The reciprocal system is often kept hidden. In fact, the more explicit the rules of reciprocation, the less the will to reciprocate (Godbout & Caillé, 1992). As a gifter and receiver of gifts you want to keep as far from a contractual agreement as possible, because the contractual agreement strengthens market value and diminishes the social bonding value of the gift. In fact, to revert to monetary terms in something that started out as gift-giving often hints at frustration or disillusionment. There are of course selfish forms of reciprocity and gifting, in which the giving to others is aimed at obtaining beneficial by-products (this is referred to in the biological literature as pseudo-reciprocities or pseudo-gifting since it more clearly imitates the exchange mode (Connor, 1986)). *Pure gift-giving* refers to the disinterested gift, the gift you give without an expectation of a return. In terms of research, gift-giving has mainly focused on the open-source movement and recreational file-sharing. Research on open source communities as gift economies has found motivations such as feelings of creativity, improvement of programming skills, monetary reward, community obligingness (Lakhani & Wolf, 2003) reputation as code-writer and as reassuring the quality of the code (Bergquist & Ljungberg, 2001). Some of these motivations are clearly self-centered (money, skills, reputation), while others are harder to categorize (community obligingness, assuring quality of code). Interestingly, work in the area of open source has also identified groupings of kinship as a structure visible in larger sharing networks (Zeitlyn, 2003). As for file-sharing, it has been described as a “parasitic gift economy” (Giesler & Pohlmann, 2002), referring mainly to combination of the modes of coercion, exchange and, to some extent, reciprocity. Other studies have tried to explain the flaws in current understandings of motivations in online gift-giving (Levine, 2001), suggesting

that it needs further research. Kollock (Kollock, 1999) adds two incentive structures which address the 'other' end of the motivational spectrum: because others have a need for [the gifted goods] and because "the good of the group enters one's utility equation". The latter is furthermore described as the merging of individual and collective interests. While this presents a case where the controversial existence (or not) of pure altruistic gifts becomes highlighted, a merger of interests is not always possible, and if possible can be preceded by a process fraught with conflict.

As previously noted, the tension between the interests of an individual and the interests of the group, which that very same individual belongs to, is called a social dilemma. Social dilemmas were described in terms of the tension between the individual rationality (acting in self-interest) and the collective rationality (acting in the interest of the group). The recognition of this conflict has been argued to be part of making community studies include symbolic, and not only geographical co-locational, dimensions, for example to include online venues (Fernback, 1999). The temptation to act in a self-centered fashion is often very strong for the individual since the benefits are often more or less immediate and, estimated to be larger in the short term. Nonetheless, if a large number of individuals put their self-interest first, the group as a whole gets a smaller benefit (or no benefit at all) compared to if most or all individuals acted primarily with the interests of the whole group in mind. Hence, social dilemmas can be described as a conflict between different levels of rationality and where the individual experiences it as a conflict between the short-term, selfish interests (the individual rationality) and the long-term, altruistic/group interests (the collective rationality).

In an online situation, how do gifting individuals balance trade-offs between their own benefits, the benefits of other individuals and the "greater good"? This is a fundamental question for understanding needs and behaviors of both individuals and groups, in file-sharing networks. The gift-giving perspective becomes more visible once the question is transformed into a dilemma of balancing the giving of public and private (digital) goods. The overall dilemma for a user of a file-sharing network lies in the temptation to exclusively take, or download, from others and not give anything in return. However, if no one engaged in gift-giving behavior, there would be no digital goods available for downloading and the network cease to function as a "gateway" between giving and receiving. Digital goods are being given away online in groups with various "social densities". Such groups can range from small "cabals" where real-world ties are strong to tightly-knit online communities, semi-anonymous groups and large networks of complete strangers. An individual user can often be part of such groups at several different "levels" at the same time. Correspondingly, for a user with *gifting* interests (i.e. other than self-interest), the dilemma is how to consider the trade-offs between different levels of receivers. Indeed, it is common for different kinds of gifters to practice different gifting behaviors based on their

estimation of the relative trade-offs between the individual good and the greater good. While the terms individual and collective rationality represent a profound notion within sociology and social psychology (and many other disciplines), they do not seem to be fine-grained enough to describe the gift-giving behavior exercised by many individuals in file-sharing networks. To understand such networks, we suggest that it is necessary to consider trade-offs between egoistic (e.g. *personal*) interests, interests of a small group (or several groups) of well-known individuals (e.g. *friends*), of small networks (e.g. *acquaintances*) and of large networks (e.g. *strangers*). Notably, since the paper's focus is on online gift-giving, we will here only consider the tensions where (obvious) self-interest is not a part of the equation.

Model of Relationships

The notions of micro, meso and macro generally relate to levels of reality entailing our entire social world. It is not our intention to suggest that a file-sharing network constitutes a self-contained world. Such networks are of course influenced and controlled by external factors of "reality" (such as laws for example). However, the network is at the same time a file-sharing space containing its own practices, norms, values and structures. Likewise, different types of peer interaction will be an important part of understanding and describing the social dynamics of file-sharing (Ebare, 2004). Although there is no consensus as to whether virtual communities could be considered "real" communities, it is beyond doubt that virtual venues – including file-sharing networks – include many structural and cultural patterns. One pattern is the various levels at which interaction occurs in such networks.

The interaction in file-sharing networks happens between the individual, small groups (with strong ties (Granovetter, 1973) between members), networks (with weak ties between member) and large networks (with very weak or no ties between members). These levels relate to the general notions here of ego (the individual), micro (group of close peers), meso (small networks) and macro (large networks) (see Table 2, next page).

The term 'relationship' refers both to the prototypical relationship between actors at each level of the model (that of being friends, acquaintances and strangers) and also to the relationships between different levels in terms of patterns of conflict and cooperation (described below). That is, the *typical* relationship at the micro level is one of being friends; the *typical* relationship at the meso level is one of being acquaintances and the *typical* relationship at the macro level is one of being strangers. That does not mean that *every* relationship at (for example) the meso level always has to be one of being acquaintances. Such a hard definition would not allow for a certain necessary degree of flexibility in for example accounting for a movement over time from being strangers to being

acquaintances to being friends. Also, at a specific point in time, someone can be included into a network of peers that I belong to without me (yet) having made the acquaintance of that person.

Level of Relation	Group Structures	Common Incentive structures
Ego	Me, myself and I	Self-interest, maximizing own benefit
Micro	Small group of close peers, well-known <i>friends</i>	Social, reciprocity
Meso	Small networks of peers, recognized <i>acquaintances</i>	Social, individual and general reciprocity
Macro	Large networks of file-sharing users, anonymous <i>strangers</i>	Ideology, Rationality of Equality

Table 2. Model of Relationships

When moving from ego to macro, each new level contains more individuals/nodes. In parallel, the requirements for inclusion (barriers to entry) diminish when moving from ego to macro. What these requirements technically consist of and how they are met differ in different communities/networks but a general observation is that requirements become more rigid when moving from macro to ego. Another dimension is that of public and private goods. In terms of giving goods, moving from ego to macro increases the number of potential receivers, or in other words, the more we move from ego to macro, the more we move from gifting of private goods towards gifting public goods.

At the **macro-level**, the structures addressed are large networks. Inclusion requirements at this level are low, often only requiring that a file-sharing application is installed and used. To the individual, these networks are pseudonymous and ubiquitous. They can be for example the network (all users constituting nodes on a particular network), the application “community” (the entire group of people who use a specific application) or even the entire universe of file-sharing activities at large.

At the **meso-level** we find smaller networks, which carry more requirements for inclusion. In a file-sharing network they might relate to interests or types and quality of potentially giftable goods. Inclusion can be based on reciprocity (balancing the amount of goods given versus taken) and responsivity (responding to a social request of inclusion or to an instrumental request of a certain item). These networks are still pseudonymous and social ties are generally weak (but still strong enough to motivate a different behavior than at the macro level). There might also be temporal aspects to these networks, as a certain network might exist only for a short period of time. The reason for this being that they might be

considered as passage of trust or a level of consideration before moving towards a closer (or a more distant) relationship.

On the **micro-level** the social relations and motives are stronger. They might still be based on reciprocity, but the goods are often transferred with a larger *bonding value* (Godbout & Caillé, 1992) encoded. These can refer to online friendships developed over time, often grounded in similar taste in shared goods. Another option is that there do exist offline social ties, i.e. the group is embedded in social relationships that exist also outside of the Internet.

The **ego-level** refers to the single individual and his or her position in the networks.

These levels are of course interdependent and they co-influence and co-evolve over time. The model supports a hermeneutic way of considering the parts and the whole. As we stated earlier, it is in the relations between levels that interesting tensions can be found. The model allows the identification of six simple types of relations, *ego-micro*, *ego-meso*, *ego-macro*, *micro-meso*, *micro-macro* and *meso-macro*. We choose to not make a difference between ego-micro and micro-ego and we will not consider complex relations between more than two levels in the model here.

In this paper we will only analyze three types of relations, *micro-meso*, *micro-macro* and *meso-macro*. As apart from *ego-micro*, *ego-meso* and *ego-macro* relations, these three relations do not involve a conflict between the individual and the collective rationality. They are more interesting to look at here as they all represent different kinds of tensions and conflicts of interest *within* what has previously just been labeled “collective rationality”. These relations have therefore been especially difficult to perceive and analyze before. Also, they all represent situations where self-interest is not obvious. Understandably, it can be hard to completely distinguish ego-level motivations from other levels, but we will give examples below where it is not very obvious what the individual’s gain consist of in choosing between different alternatives. In terms of Kolm’s modes of economic transfer, all choices represent different alternatives that at the same time are all based on other-oriented/non-self centered motivations.

Examples of conflicts of interest in file-sharing networks

Users of file-sharing networks are very innovative in using available technological features to differentiate between various other users. We will therefore start by describing some generic technical features of file-sharing applications to provide the necessary vocabulary for understanding the rationale of users. These features were all present in the studied application and are, in some form or another, present in most of today’s file-sharing applications.

Capping mechanisms limit the upload or download speed by specifying a maximum value (the speed is “capped”). The ability to “cap” the speed provides an incentive scheme for people to gift or reciprocate – and to “punish” those who don’t. In a way, *capping* is a milder variation of banning. For example, instead of banning a certain receiver, the gifter might decide to “only” cap their download speed. In reverse, the receiver can, by upholding social bonds or reciprocating in another desirable way increase or remove the cap.

Banning is a mechanism used to stop computers or users (depending on what criteria for banning is used, ip-number or user name, for example) from uploading or downloading. The feature is typically used for anti-gifting purpose and *not* using such mechanisms can be a sign of gifting. (Note that this is a complicated issue. Users may not be aware of such banning possibilities, so the fact that they do not ban is not necessarily evidence of deliberate gifting.)

Download slots regulate (decrease or increase) the number of possible simultaneous downloads.

Queue bumping the queue is the number of persons waiting for an available download slot. By bumping a queuing user up or down in the queue, the gifter can increase or decrease the waiting users’ queue number. It is also possible to remove someone from the queue completely.

Buddy lists are lists of friends and acquaintances and they are usually integrated with different messaging features. Buddy lists have been integrated with banning and capping features in file-sharing applications and can be used to target people who will get “VIP treatment.” The integration of buddy-lists with file-sharing features has generated much controversy as many feel that it strongly violates the very spirit of file-sharing.

Despite the fact that all of the technical features listed above concerns different ways of *restricting* access, the foremost feeling with the individuals who made use of them was that open file-sharing (i.e. sharing without restrictions and to anybody) was the ideal state. This in itself represents an interesting tension and gives support to the weight put on the *gifting* side of file-sharing. As we shall see below, the restrictive features can be used both offensively and defensively to distribute and optimize gifting according to individual preferences.

Data Collection

Although we see the need of more quantitative studies, it is our belief that, at this point, the most rewarding perspective into online gift-giving behaviors and ‘other’ motivations is taken by qualitative studies. Qualitative studies intended to inform the design of technology have for a long time been part of the CSCW (Computer-Supported Cooperative Work) field. The use of ethnography as a design informant has also been suggested to expand out of the constrained and focused area of work into other domains (Hughes et al., 1994). We believe that the studies of the vivid, recreational file-sharing (and in particular file-gifting) we see online today, has

not only the ability to inform the design of recreational systems, but also be applicable in other, more utility-focused domains as well.

For this research we used a range of methods most accurately described as virtual ethnography (Hine, 2000) or netnography (Kozinets, 2002). In simple terms netnography is “ethnography adapted to the study of online communities“. The study was conducted over a period of six months. During this period we combined participatory observation in the application itself, as well as in the corresponding web forums. Continuous field notes were taken during the interaction through the application. However, the most gratifying source turned out to be the web discussion groups (or bulletin boards) associated with the sharing application in question. From the forum we collected 580 relevant messages at various length. These messages were coded with regard to the motivation for gifting and technical feature used. From the data a pattern of different types of collective interests emerged. This pattern consequently formed the basis for the developed relationship model. As an additional way of verifying the results from the discussion-group and application observation, ten brief interviews with users were conducted through the applications communication features. These users were randomly selected.

Micro-Meso tensions (friends vs. acquaintances)

These tensions concerned the trade-offs between a smaller group of close friends and a larger group of acquaintances (trusted or considered peers). For example, users would keep buddy lists to which acquaintances would be invited. However, within this buddy list, they would also keep a queue to allow friends to skip ahead if necessary. In this way they used the available features of the application to distinguish between friends and acquaintances. In this case the buddy-list represented acquaintances while the queue bumping targeted specific friends. The motivation for this behavior was often social. Allowing someone to skip the queue symbolized a wish to keep or strengthen a social bond to “someone special“. The outcome was often in favor of friends, but there were also examples of the reverse as some users who did *not* allow friends to skip ahead in queue. In the words of one user: “They’ll have to wait like the rest in my list“. The rationale for this was that keeping a queue where everyone on the buddy list is equal was more important than keeping social ties with specific individuals. There was a strong element of politeness present here. *Even though* the queue as such was ubiquitous to the users in line (it was possible to request a notification of your queue number, but it was not automatically updated), the moderator of the queue (i.e. the gifter) felt it impolite to go against the sequence of the queue.

Micro-Macro tensions (friends vs. strangers)

The micro-macro tensions were the most prevalent in the study. There were users who for social and technical reasons favored sharing with close friends. However, there were also users who strongly disagreed with the use of *any* restrictive features. One user states: “To me, only sharing with your friends is the same as sharing nothing”. This user represented a group of users who favored the rationality of equality over any other motivation. The most important concern was to gift to anybody interested, regardless of him or her being a friend or not. To these users the notion of sharing had a strong aspect of fairness and was often dichotomized as “[...] either you’re sharing files or you’re not”. The discussions between users who favored friends over strangers and users who favored strangers over friends also revealed a general social tension. Closely connected to this clash of social and ideological motivations was a tension concerning the use of communicative features in the application. This was a tension between what we may call *communicators* and *instrumentalists*, or between the desire to be friendly or anonymous.

The communicators saw the purpose of file-sharing as a way of making friends. They emphasized the communicative and “have in common”-aspects of file-sharing. They felt that this emphasis also benefited the community spirit and created stronger social ties between the members of the network. Somewhat counter-intuitively, the way of generating the communicative environment was through (the restrictive feature) buddy-lists. This generated a setting in which the communicator’s desire was to get strangers to communicate before receiving any goods (i.e. setting up a requirement for inclusion).

The instrumentalists on the other hand saw personal communication (and making friends) as a nuisance and an unnecessary hindrance for the most important function of the network: to give and receive goods without restrictions. One user tellingly explained: “I don’t think it’s very efficient to strike up a friendship with someone every time you want to download a file.” By “having” to communicate with others, the transaction costs rise and to them decreases the overall utility of the file-sharing network. Instrumentalists have thus coined the term “burdens of sharing” to refer to the will of giving away goods but to remain “undisturbed” by questions, further recommendations and social small-talk. In terms of levels of relationships, this tension can be seen as a will to move in one of two different directions – either towards the micro-level of interaction (communicators) or towards the macro-level (instrumentalists).

Meso-Macro tensions (acquaintances vs. strangers)

A situation where users would opt for the relations with strangers over acquaintances was the indirect discovery of potentially interesting material. In the words of a user: “At first, I was sharing with just people in my user [buddy] list

[...] BUT it appears that browsing files of people who download from me is very interesting to find rare pieces”. Though the incentive could be argued to be self-centered in this case, the relation is imbalanced (mostly in favor of the other party) and open-ended (it requires a deliberate repeated action of “browsing” by the gifter to “pay off”), thus more similar to gift reciprocity. To further accentuate the gifting aspects, this behavior was also used to attract other users to one’s own goods. Users shared popular material in order to interest potential receivers in other gifted goods. Another tension on this level was with users who experienced that they had limited technical resources, but still wanted to gift as effectively as possible. For that purpose they used buddy lists to regulate to who and when they were able to provide goods. In the words of one user: “i don’t have a fast pc like other people...what’s the point of sharing when i transfer a file at 1.2kb/s...when i had ‘share with everybody’ the line [queue] was so long people just got tired of it and didn’t bother waiting...at least if i regulate who d/ls [downloads] from me...they’ll get some satisfaction that there file will be done quickly”. In this case the usage of restrictive features was motivated by being able to gift files at a “reasonable” speed and to users who seemed interested enough. In other words, users concerns with gifting efficiently made them favor certain strangers by turning them into acquaintances (through buddy lists and communicative establishment of level of interest). Instead of giving to anyone interested (macro-level strangers) certain application features allowed the user to coordinate and optimize gifting by moving recipients to a closer level of relationship (meso-level acquaintances).

Notably, with all relations concerning the macro-level there was a strong ideological preference for keeping file-sharing open and available to anyone. That is, the ideological motive of keeping the spirit of gifting (as opposed to strict exchange) prevailing was favored over ties to both friends and acquaintances. As one user puts it in a discussion on the topic “Sharing ain’t trading”: “When you share something you do it with no expectation of anything in return. ... When you expect something in return that’s trading.”

Discussion

Our studies spurred a need to refine the notion of individual and collective rationality when considering social dilemmas. The relationship model developed in this paper has two main functions. *First*, it is suitable to describe findings from our empirical studies in actual file-sharing networks. As such, the model has explanatory value as it has helped us to understand tensions and conflicts that were difficult to perceive and identify before. *Second*, it is a useful tool for inferring potential (not-yet-identified) conflicts between the different levels (ego, friends, acquaintances, strangers). As a model it can however be used in two more ways; as a methodological tool in stating perspectives, i.e. from which level’s

view you're comparing relations to other levels; and also as a way of describing the entities existing in a file-sharing network. It has been a modeling of general types of peer interaction somewhat in line with what Ebare (Ebare, 2004) suggests.

The application of the model to file-sharing networks is this far promising. We have in this paper given a few brief examples of how the model can be used to describe and capture conflicts of interest with gifters in file-sharing networks. Future work will go into further detail with these conflicts as well as test the model's applicability to other types of tensions in file-sharing networks (the relations between ego and the other levels). As far as conflicts are concerned, the dimensions of gifting openness and restrictiveness and the tension between communicators and instrumentalists, seem like promising analytical targets for the relationship model. Previous studies has also suggested dimensions of active, passive, pro-active and responsive gifting (McGee & Skågeby, 2004), dimensions that could be related to relationships. Many other studies indicate that online gift-giving is an undirected action, aimed at a large audience and no particular individual. For example: "Gifts are often not given to anyone in particular. They are made public [...]" (Bergquist & Ljungberg, 2001) and "[...] actions and contributions in a virtual community are usually not of a directed nature" (Balasubramanian & Mahajan, 2001). Contrary to these findings, our studies suggest that many users actually did perform active and directed gifting. After the data collection for this paper was finished one file-sharing application also incorporated features for directed gifting. The nature and motivations of active and directed online gifting will probably generate different relationships and our future work will surely incorporate this phenomenon.

Concurrently with deepening the understanding of gifting motivations within recreational file-sharing networks, it is also important to try to generalize the findings and relate to broader scopes of interest. Thus, it is important to note that even though we mainly address *conflicts* and *tensions* in this paper, the relationship model is not limited to such types of interaction. It might as well be used to describe and identify patterns and structures of *cooperation*. It is possible to say that we have started our investigation by asking "where are there differences in opinion about suitable behavior in file-sharing networks" and "what do people quarrel about in file-sharing networks?" It should be pointed out that an equally valid starting point would have been to ask "how come, and in what ways do people cooperate in file-sharing networks?"

It also seems as a representation with a more differentiated approach towards analyzing "collective rationality" could fruitfully be used to look also at other phenomena than file-sharing networks. One such phenomenon could for example be tensions and conflicts of interest in so-called Massively Multiplayer Online Games (MMOG). These Internet-based games can have many thousands of simultaneous users connected and some examples of the more well-known games

are called Everquest, Dark Age of Camelot, Star Wars Galaxies and Lineage. Social interaction within these complex games can easily be analyzed from the perspectives presented here. The different levels of analysis would again correspond to self (ego), friends (exclusive buddy lists or small group of close peers), acquaintances (network of recognized peers – typically called “guilds” or “alliances” within these games) and strangers (the mass of anonymous players that constitutes the whole virtual world/society). Another domain, which could be further analyzed with help of the relationship model, is open source software development. We have already seen quite an interest for this movement in terms of gift-giving. We believe the broadened analysis of levels of relationships could add valuable insights to the understandings of this phenomenon.

Another important goal is to draw design conclusions from these types of studies. From this point of view, an interesting observation from this study is that gifting users combine rather simple features to create sets of functions to pinpoint and address specific needs or generate desirable outcomes. Perhaps more importantly, these features are, at first glance, directed towards restricting access and as measures designed for hindering gifting. Indeed, the use of restrictions was often grounded in an estimated limitation of, mostly technical, capabilities, and as such the features were considered “necessary evils”. Even so, users actively combined features to optimize or coordinate their gifting to acknowledge the relations considered most appropriate. As one user, addressing macro-level relations, summarizes it: “I only have rules because of my consideration for everyone and my desire to share as much as possible. It sounds ironic and contradictory, but it works [...]”. Consequently, we can argue that design to make selfishness generate positive externalities can still be a part of leveraging gifting behavior (although the user might not be aware of it, which adds an element of ethical consideration). We further argue that there are viable reasons to examine digital gifting in combination with the design of technology. The relationship model and the types of peer interaction plus the patterns of conflict and cooperation it describes can provide an important tool of analysis and prediction in this process. Expanding the center of attention from “getting” problems to include the needs of gifters will draw a more complete picture of file-sharing. This picture would likely benefit from the responding development of potent, wide-ranging, useful, and economically viable services for, not only *obtaining* digital goods, but also *gifting* them.

We have in this study focused on gift-giving behaviors in file-sharing networks and for this purpose developed the relationship model as a more nuanced view on social dilemmas in these settings. Conclusively, we see the relationship model as having the ability to frame many other types of social activities and relationships in both recreational and professional domains.

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