

Circulating property. Free software as
inalienable object and the reality of giving-
while-keeping.

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“.. Inalienable possessions are embedded with culturally authenticating ideologies associated with mana, ancestors and gods that give shape and drive to political processes. They are imbued with history composed of their own exceptional trajectories and the beliefs and stories that surround their existence. These encompassing ideologies are active forces that both validate the absolute value of inalienable possessions and verify the difference among individuals who own these coveted objects...”. (Weiner 1992: 150)

Free software can seem illusive and slippery, always in movement. In a very practical sense; the essence of free software is free distribution, the unlimited circulation and constant flow of packages of data. Free software is here and there, sometimes even everywhere, embedded and meshed into the things and technologies on which the present life rests. Free software is something out of the ordinary, as the term indicates, it is “free” and hence everyone is allowed to redistribute and/or modify it. These rights are written into the GNU GPL license (GNU General Public License) under which most of free software is licensed. Likewise it is extremely ordinary, it is simply just here and there and no-where. Free software is all of what has been stated, and even perhaps more or less. Free software has many perspectives, just as the words 'more' or 'less' in Unix terminology refers to small programs used to view but not change contents of a text file. This document is more in the form of an essay and less of a paper structured in the tradition of academia. It is my personal intention, in this way, to bring my own lines of thought into focus and hereby to leave the reader with a sense of the playfulness and curiosity I encounter and invest in my work. The aim is to pursue the paradox of giving-while-keeping (Weiner 1992) which emerges in the relations and transactions between a particular strand of free software and the capitalist market. Here exploring how circulation of free software – as a particular kind, or form, of property – equals resistance to, and a rethinking of, present economic relations.

The background of the following document is a still ongoing fieldwork situated in the boundary location between a free software project and a plurality of commercial companies. The aim of the research process is to explore expressions of ownership and the unfolding of property relations – in the form of acts of owning and appropriating which underwrite and inform such relations.

I have found a space within a setting woven into the OpenWrt.org project. Setting, as term, is here used in a slightly metaphorical sense, then the project – the day-to-day activities of all the individuals who have declared their belonging through participation – is distributed across the globe. The project itself is focussed on the constant development of a Linux based embedded operating system for small networked devices, ranging from cheap wireless routers to 'state of the art' mobile phones. The majority of the visible interaction and development work takes place from within a domain which consists of a website with online forums, several irc channels (internet relay chat), a public wiki and a source-code repository. Large portions of the actual “work” and everyday life is digitally mediated – it takes place on the internet, and hence there is not a lot of classic face-to-face interaction. On the other hand, OpenWrt.org participation is at the same time very much based on actual tinkering with and manipulation of digital hardware in terms of soldering, accessing serial interfaces, bootloader modification etc. More, numerous of the members and developers of the project travel, meet and get together at, and around, social occasions ranging from 'hackers' conventions, 'ad hoc' gatherings or private invitations. It is a mix of individual isolation and communal nomadism, maybe a new kind of high-tech “hunter-gatherer” lifestyle (Petersen 2006). The circulation of the cultural product, the software licensed under GNU GPL, is reflected in the mobility and circulation of members and developers of the project. This also counts for other specific cultural aspects, such as notions of value, ethics and an essential focus on sharing (with all its demands).

The OpenWrt source-code and software is given away, its transacted, exchanged, re-distributed – and very much integrated/embedded in the activities of the market. There is a quickly increasing list of manufacturers and companies using OpenWrt source-code in

their commercial products. Either directly, with minimal modifications, or through the compiling of specialized assemblies of OpenWrt source-code, proprietary code or third part GPL'd code. Such compilations are more often than not done by utilizing the OpenWrt buildroot/toolchain system due to its high flexibility and robustness. Despite the free access and right of use the ownership is somehow not being transferred, the original ownership and its biographical details are maintained. The integration into products of the capitalist market and the question about ownership raises new lines of inquiry and questions: Then is it possible to alienate free software from its owner, through which the calculations of the market become possible? If not, how does this then influence exchange relations and the economical thinking of the market?

Parallels

Free software is developed and distributed under, what is termed as, a copyleft license, in practical terms this is a turning upside-down of the notion of copyright. The GNU GPL license is the most common of these licenses, and it is maintained by the Free Software Foundation. Software and source-code licensed under GPL is characterized by securing both individual copyright (the recognition of authorship) and the communal right to free re-distribution, to change and to use it in accordance with the text of the license. Free software, licensed under GPL, is hence both individually owned and circulating freely. When I here refer to individual ownership it has to be understood as named individuals likewise as named groups of individuals who have collaborated on the creation of the product. Looking through the OpenWrt.org source-code repository will show that the majority of the files – source-code exists in the form of simple text files – are copyrighted by OpenWrt.org, as shown in an example below:

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Copyright (C) 2006 OpenWrt.org
This is free software, licensed under the GNU General Public License v2.
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The OpenWrt project has a strong cultural emphasis on collaborative ownership which is directly expressed at the beginning of each of the text files. The use of a publicly accessible repository simultaneously documents the identity of the individual who did the actual check-in of the file, hereby providing the essential biographical/genealogical information.

Collaborative, or multiple, ownership is a signifier of the 'free software culture' (Leach 2005 & 2000a, Strathern 2005). The rights of original authorship are guaranteed and recognized, but coherence is only possible through adding the individual piece of source-code to the collaborative flow. This emphasis on flow and circulation as cultural paradigm brings parallels to Melanesian ethnography into focus. As it is so strikingly noted by Strathern:

“.. In Papua New Guinea, not only is great interest often put on things acquired through transactions but explicit value is put on maintaining the flow itself...”. (2005: 17)

The underlying multiple ownership to free software does furthermore underwrite the reality that it is not possible to buy or acquire singular ownership and control over the same software. You are free to use, distribute and/or modify the software in what ever way you wish, as long as all changes and modifications of the involved source-code is freely released under the same license as the original, and (genealogical) credits are reproduced in the text file itself. Entitlement and claims in respect to ownership are only possible through actual participation in the creation and reproduction of the source-code. When it then comes to OpenWrt.org, how is entitlement, and ownership claims, to the

cultural product of the project acquired or given – how does the individual become part of the multiplicity? There is the essential act of writing code, maintaining, updating and expanding the code which in structure traditionally is likened to a tree. Though, the location I'm situated within goes further than this, and places particular emphasis on participation. During a discussion, on the #openwrt-devel irc channel, with several central informants one person asked: What is the essence of OpenWrt.org membership? One of the core-developers responded quickly with a one word sentence:

“.. participation...”. (personal communication 2007).

The discussion went, with this statement, onward and generated a series of replies and questions across several hours. The conclusion was quite forward; participation is membership and membership is participation. Participation was identified as a combination of practical use of the software (doing and practising belonging) combined with the public registration of a membership-account (login) on either the online forum, the wiki or with an irc nick-name (declaring of belonging). This creates a connection between individual and project, and it is maintained through the reproduction of circulation, as inherent value, and the statement of the particular model of ownership. The OpenWrt source-code, and software, manifests as a highly entangled object (Thomas 1991) woven into a particular form of cultural practice. Reaching insight into this entanglement requires an:

“.. analysis of processes and grounded regional distinctions which actually relates to peoples rather than rhetorical types... [and] .. this set of insights is liberating: in conjunction with established understandings of spheres of circulation and classifications of things, insistence upon the fact that objects pass through social transformations effects a deconstruction of the essentialist notion that the identity of material things is fixed in their structure and form...”.
(Ibid: 27-28)

By attending to the kinds of transactions and the people themselves one can unravel the intricacies of productive relations, and thus the expectations and expressions of ownership, as Leach (2000a) points towards. One the market everyone can make money, and when it comes to free software it is open for anyone to try any way they can think of to do so – this is as well the case in respect to the OpenWrt software, as long as the parties involved maintain the interwoven lines of relations the property is meshed into. Turning away from abstractions and unquestioned assumptions brings attention to the code-like character of software – attending to source-code and software as practice and material shows why it at times becomes very visible and significant (Mackenzie 2006). The cultural practice of a project like OpenWrt.org is highly context-specific and localized. The everyday activities might seem technical in its purest form, but the technical knowledge production overlap and enmesh with imaginings of sociality, identity, collectivity and enterprise. In other words, and as Mackenzie (2006) unwraps it, the technical production of source-code interlace with a particular practice and cultural code. The logic of this code rests on a position which opposes individual appropriation, involving acts such as hiding, secrecy and hoarding – as I experience though-out my fieldwork.

In context

The commodification of cultural products is an essential building block of the capitalist economy, based on the western construct of a singular notion of copyright. The source-code created by OpenWrt.org, and the acts and expressions, outline a way in which

products and knowledge can be owned by multiple persons or groups. Following the discussion by Coombe (1998); property is constituted by flexible and negotiable relationships between persons and things that continually shift to accommodate current social needs. It is here my argument that a notion such as 'copyright' has to be explored in context, not just taken for being an objective concept with universal properties. Geismar (2005) unravels the interaction between traditional customs and international law in Vanuatu, with his focus on the production of traditional drums for sale on the tourist market. The dynamic interconnections of the cultural context forces a rethinking of the conceptual boundaries around entitlement and owning, whether this involves ritual drums or software. Property becomes inseparable from the cultural context, and when the OpenWrt.org project gives away source-code and software it carries and reproduces “its” identity across time and transactions. Again this brings the modern world and the tribes people of Papua New Guinea into mind, then both seem to recognize that:

“.. A connection is maintained between the person who had the original idea and brought it into being as an invention or application, and the potential future (in terms of profit) of that idea...”. (Leach 2000b: 163)

The western response is a limiting of the use, and access, other persons have to these embodied ideas. Whereas the Melanesian approach is quite different, being centered on maintaining flow and distribution. Still, there are conceptual domains within which the Melanesian individual or group are able to limit the use of resources, and hereby restricting (or resisting) exploitation for economic ends. Meaning, copyright can, and has to, be understood as more than a monolithic construct underwriting the dominant notion of capitalism. Instead it is needed to investigate how property and knowledge is managed, how acts of owning and (protection from) appropriation unfolds into relations and transactions - this brings people to the forefront, then:

“.. Every property is an extension of personality; property is that which obeys our wills, that in which our egos express, and externally realize, themselves...”. (Simmel 1906: 454)

I have been drawing parallels to Melanesian ethnography, as well as keeping the reader in suspense when it comes to the core issue of this discussion. It has been my intention to highlight certain cultural aspects of free software, and in particular the OpenWrt.org interpretation and expressions of these. What is a hand here, is that the reader is being offered glimpses at an extended group of people, in the shape of the OpenWrt.org project, who are producing a specific cultural product – the software is by declaration the property of the project, and hence all the individuals who belong and participate. I have here drawn the attention to two key-issues; then this property emerges in a convoluted and entangled form which relies on multiple ownership and free circulation. Both of which are opposing capitalist notions of singular ownership and exchange based on commodity transactions. In general terms, the circulating property of the OpenWrt.org project stands in opposition to a world which thrives on alienating objects, and cultural products – it stands up against processes of objectification and the detaching from an original owner.

Circulation

Free use and distribution, but not as in “free beer” as the well-known GNU GPL proverb goes, is the visible characterization of the OpenWrt.org project. Lee & LiPuma (2002) coined the term; 'cultures of circulation'. They brought attention to how such a culture is created and animated by the cultural products (forms) that circulate through them, and

hereby how the process of circulation itself is underwritten and propelled. Presupposing this circulation are respective communities of interpretation, with localized forms of evaluation and interpretation.

“.. these interpretive communities determine lines of interpretation, found institutions, and set boundaries based principally on their own internal dynamics...”. (Ibid: 192)

The flow of cultural products reflects internalities of a particular cultural location, such as OpenWrt.org. This notion plays in accord with my earlier comments, by Leach (2000a & 2000b) and Strathern (2005), and Mackenzie (2006) has likewise emphasised the importance of circulation in respect to the meaning creation process of open source code. Flow and circulation are more often than not assumed to be aspects tied to non-market, or non-capitalist, based societies, as Lee & LiPuma (2002) specifies. Though, as I have been discussing so far – OpenWrt.org with its cultural production of free software is both a culture of circulation and an actor involved in the market.

The capitalist market, the ever present commodity based economy, is an interesting subject? Gudemann (2001) has emphasised how economy consists of two realms, and he makes here the distinction between what he calls 'community' and 'market'. This refers to localised associations and imagined solidarities in which people are involved or experience, when it comes to community. His use of market underlines the element of anonymity and short time-perspective in the transactions, and processes of exchange. Gudemann's point is that the two realms are ever-present, but characterized by either social relationships constituted by the local and specific, whereas the global is impersonal and abstracted from a social context. These realms are separated from each other but constantly interacting – though, the one or other are placed in the foreground in the practical reflection of analysis or ideology. Relationship between the two is complex, shifting and constantly filled with tension. The dialectic relationship of the two realms is essential to an understanding of how connections emerge through practice and institutions. There are similar thoughts in Granovetter's (1992) concept of the embeddedness of economic life, where the networks of interpersonal relations “contain” the actual behaviour of people and groups. His interest is to find the distinction between which kinds of transactions are to be found within the market, and which are kept within hierarchical structures. One major point in this is the claim that the economic behaviour of non-market societies are and have always been less embedded, as well as being persistent in the modern market. What, from my point of view, keeps being interesting is the continued creation of separated categories. There has been a constant identification of boundaries between what is non-market, what is commodity exchange, what is gift exchange and what is barter (Humphrey & Hugh-Jones 1992)? Bourdieu (1977) might have helped “shake” these notion with his re-interpretation of Mauss' (2002/1954) analysis of the gift, emphasising elements of strategy, self-interest and in particular the notion of calculation and individual profits. It seems, in accord with this line of thought, that the commodity based transactions of the capitalist market have entered ubiquitousness, creating a single frame of reference. There is a logic at hand which deliberately ignores other models of understanding and the blurred reality, which comes to be exemplified through my work with OpenWrt.org and free software in general. It is almost as if an interest in disentangling keeps fighting the pressure of entanglement.

The grey-zone properties, the mixing of prior distinct categories, can seem confusing, but they do point towards new kinds of acts - which in reality might be age-old. Fractures and resemblances manifest themselves when a focus on the day-to-day practice of people

and groups is integral to the methodological approach and analytical process. Assembling becomes a key-term - being embedded, as researcher and participator, amongst people who constantly are involved in the subversion, modification and re-interpretation of ideas and technology confronts and questions – and this pushes both new and old theoretical perspectives in and out of view. I believe that this notion of assembling is a reflection of acts of resistance who are so much part of the practice of everyday life, when it comes to the point of creating meaning.

I have elsewhere (Petersen 2007) explored how a new kind of actor, such as the OpenWrt.org project, can influence and shape other market actors, and perhaps the market itself. The anthropological “punt” I played with in that context was a comparing of the kind of agency, represented by the OpenWrt.org project, to the use of magical actions and objects. When it comes to the magical object it is well-known how it carries the intentions and will of an owner, and it should require little reflection to weave this together with my previous comments on property.

OpenWrt.org are deliberately giving away their property, the product in the form of the source-code they produce – the circulation of the projects property is essential to maintaining and reproduction of the project itself. This is a frontal collision with basic principles of the capitalist market, then if something is given away, or found “un-attended”, it will be subject to singular appropriation and subsequent commodification. Despite this, OpenWrt.org seems neither to fear that the source-code should fail in carrying the will of its owner onwards, nor the loss of ownership itself? Paradoxical seems to be an illustrating comment, then how can anybody let their property circulate freely – and how can circulation be seen as an act/expression of owning (and inherent resistance)? This multitude of thoughts and experiences, on my part, brought me to the point of wondering if free software can be alienated at all?

The notion about inalienable possessions is not a novel one, Annette Weiner (1992) questioned all the traditional assumptions about economics, exchange relations and power with her analytical use of the act of 'giving-while-keeping'. I am aware that I have reversed the sequence of words of the originally statement, and this is deliberate. The logic of free software is based on 'giving', if this was not the case there would be a lack of coherence (Leach 2005). Giving does, just as in the original paradox, not imply that what is given is not kept, nor lost in the travelling world of commodities – and this leads to the point that:

“.. there is a need to rethink the whole basis of ownership. Where it is assumed that ownership of a kind envisaged by western property regimes is appropriate, as in the convenient mixture of familial obligation to assist in familial enterprise, and capitalist appropriation of profits with no regard to family obligation, we see development failing. It is clearly the inappropriate assumptions about the disposal of the products of resources by a single individual, once those resources appear in the form of cash, that is behind this failure. In similar vein, Porer Nombo complains that marking the brideprice of sisters as if they were tinned fish to be sold in a store shortens the network of receivers unacceptable. Money is consumed by a single individual without reference to the long term relationships that people are engaged in to be productive. He equates this with the death of *kastom*...”. (Leach 2000a)

If I should describe what constitutes OpenWrt.org 'kastom', or acting correctly in “traditional” terms, then the following comes about:

- Public circulation of both product and complete biography.
- Using is the same as participation, with a demand for sharing.
- Creating and maintaining productive relations (with 'outsiders').

It would be correct to assume that the agency of the capitalist market easily would be able to bring down and force the dead of the traditional ways of the OpenWrt.org project – and free software in broad terms. But, free software seems to be a robust and resistant alternative to the commodity based market (Coleman nd.). The paradox of 'giving-while-keeping' leads to the questioning of basic assumptions about the market and its devices.

Calculation

It might be that I should have begun this paper - or essay as I stated in the beginning – with a closer look at the notion of calculative collective devices (Callon & Muniesa 2005)? First characterized and drawn the market to the front, and helped the reader with disentangling the subject – instead I've been circling around the issue at hand during the majority of my writing. In many ways the point I am trying to make is quite simple. How does it actually work when free software enters the market? Free software has “long” ago penetrated and embedded itself in the market, it actually drives the infrastructure of the capitalist value-chain in a very direct sense. Free software is everywhere, but it is somehow not a commodity as it is proposed by Callon (1998), and therefore not part in ongoing market transaction. At least this is what I believe I am experiencing as a result of my fieldwork and the participation in the OpenWrt.org project.

In order to make market calculation tangible and defined, three steps are needed (Callon & Muniesa 2005). First, the entity, object or product has to be detached and placed in a singular space in such a way that it can be sorted out. The second step is that entities taken into account are associated with one another, made exchangeable. Finally, the result has to be extracted, the exchange itself has to take place and be over with. The practical act in a market transaction is that an object or product (good) changes hands. The entity exchanged is disentangled from the the world and ownership of the seller and attached to that of the buyer, and afterwards the buyer and seller are quits, as Callon & Muniesa explains (2005). In other words, the market transaction requires that the entanglement (Thomas 1991) of cultural product is “resolved” - it has to be alienated from existing ties of ownership. This does not assume that the product, or object, loses its cultural meaning, just that it is possible to transfer the entity to someone else's ownership. It is as Slater (2002) explains; market exchange is commodity exchange. Based on a singular property right in which a transfer of ownership ends all previous claims. The particular cultural product is thoroughly alienated, and commodity exchange does not aim at creating of re-producing social bonds between buyer and seller. It is not the intention to:

“.. sustain some broader social connection beyond the immediate market transaction... [the] .. essential market transaction is the 'alienation' of goods in the form of property, which entails limits on the kind of social relationship formed between transactors...”. (Slater 2002: 235+237)

Callon and Muniesa (2005) seems to agree that some form of alienation takes place, but it is as if they move their gaze from the object to the people – somehow their use of being quits and being aliens forgets the transfer of ownership over property. I find it difficult not to admit that, in the specific case of the involvement of the OpenWrt.org project with the market, reduces the diversity of the economic life of free software and there are:

“.. many elements within commodity exchange that seem to negate the elements of calculation, individualism, monetarization, and explicit rationalism...”. (Miller 2001: 91)

Miller (2002) continues his criticism of Callon (1998) by acknowledging that the market is

distinguished from other modes and systems of exchange. However, when the focus leaves the specific form of commodity exchange the practical market behaviour dissolves the categorical system into a limited set of economic calculations. Instead a diversity of calculations of all kinds emerge, it becomes a movement away from a hierarchical notion of the market to a horizontal diversity.

Though it is not really my intention to criticize Callon's work with reaching an understanding of the market and the present capitalist economy. This is not “against calculation”, but against the power of abstraction which is wielded by the notion of a market solely based on the process of alienation of cultural products. I actually just wanted to point at the example that free software seems to elude the alienation which is essential to the working of the market (as we know it).

The cultural product of OpenWrt.org, taking the particular form of free software, is given away and in constant circulation. But, it is never alienated from its owner, the act of circulation is by itself an act of owning and an expression of creative resistance. The free software reality of giving-while-keeping is an example of robust resistance to commodity exchange, which points towards a different form of post-capitalist economy.

“.. creating inalienable possessions is a human endeavour, universally practised, and that local manifestations, as diverse as they are, can be compared. But these universal processes are not reducible to orderly typologies or innate structural laws. They are the sources of a society's creative inspirations and they become the exacting paradoxes of social life – persistent dilemmas that can be ameliorated but never resolved...”. (Weiner 1992: 155)

Rethinking

It is needed to go beyond the gift-commodity exchange dualism and acknowledge the multiplicity of entitlements. Laws (as in cultural codes) which are intended to protect the exploitation of peoples creative endeavour from others profit (cultural and intellectual property laws) should not, through their inbuilt assumptions about ownership, contribute to this death (Leach 2000a). I think it is needed to accept the limitations of the 'laws of the market', and bring the ethnographic reality of peoples acts and actions to the front.

It has been my intention with this essay to weave the lines of the inalienable together with resistance and trace their combined implications into the future. I have sketched a world of circulation and multiple ownership – and a new kind of entity, or actor, in the form of the OpenWrt.org project. This project has its own internal dynamics, a particular horizontal approach to everyday life, which is expressed in a commitment to the creation of productive relationships with the 'other'. With those entities who are not OpenWrt. The project is giving away its wealth, not with the direct intention of initiating cycles of reciprocity, more in the sense of spreading a virus which contains the personality of the project. Hereby forcing the market to recognize the inalienability of the circulating property.

Wealth becomes not about how much certain product can manifest in terms of direct exchange value (typically measured in monetary means), instead it is how much biographical weight a product, such as source-code, musters and contains. Access to this different kind of wealth requires the constant reproduction of traditions and customary forms, and under-written by multiple ownership. Boundaries are constantly fractured and re-assembled without the possessions being alienated. Western commodity based property relations separate through ownership, and as Strathern (1996) continues; one might say that Melanesian economy connects through ownership. There are similar points to be made about the relation between the market, and its diverse actors, and the circulating property of the OpenWrt.org project.

References

- Bourdieu, Pierre. (1977). *Outline of a theory of practice*. Cambridge University Press, Cambridge.
- Callon, Michel. (1998). Introduction: The embeddedness of economic markets in economics. *The laws of the markets*, Callon, M. (Ed.). Blackwell Publishing, Oxford.
- Callon, Michel & Muniesa, Fabian. (2005). Economic markets as calculative collective devices. *Organization Studies* Vol. 26, no. 8.
- Coleman, Gabriella. (nd.). Silent revolutions: How F/OSS came to challenge neoliberal trends in intellectual property law. Download from: [Http://www.healthhacker.org/biella/intro_globalizing_informatics.pdf](http://www.healthhacker.org/biella/intro_globalizing_informatics.pdf)
- Coombe, Rosemary. (1998). *The cultural life of intellectual properties: Authorship, appropriation and the law*. Duke University Press, Durham.
- Geismar, Haidy. (2005). Copyright in context. Carvings, carvers, and commodities in Vanuatu. *American Ethnologist*, Vol. 32, no. 3.
- Granovetter, Mark. (1992). Economic action and social structure. *The sociology of economic life*, Granovetter, M. & Swedberg, R. (Eds.). Westview Press, Oxford.
- Gudemann, Stephen. (2001). *The anthropology of economy*. Blackwell Publishing, Oxford.
- Humphrey, Caroline & Hugh-Jones, Stephen. (1992). Introduction: Barter, exchange and value. *Barter, exchange and value*, Humphrey, c. & Hugh-Jones, S. (Eds.). Cambridge University Press, Cambridge.
- Lee, Benjamin & LiPuma, Edward. (2002). Cultures of circulation: The imaginations of modernity. *Public Culture*, Vol. 14, no. 1.
- Leach, James. (2005). Modes of creativity and the register of ownership. *Code. Collaborative ownership and the digital economy*, Ghosh, R. A. (Ed.). The MIT Press, London.
- (2000a). Multiple expectations of ownership. *Melanesian Law Journal*, Vol. 27.
 - (2000b). Situated connections. Rights and intellectual resources in a Rai Coast society. *Social Anthropology*, Vol. 8, no. 2.
- Mackenzie, Adrian. (2006). *Cutting code. Software and sociality*. Peter Land, Oxford.
- Mauss, Marcel. (2002/1954). *The gift*. Routledge, London.
- Miller, Daniel. (2002). Turning Callon the right way up. *Economy and Society* Vol. 31, no. 2.
- (2001). Alienable gifts and inalienable commodities. In; *The empire of things. Regimes of value and material culture*, Myers, F. R. (Ed.). School of American Research Press, Santa Fé.
- Petersen, Gregers (2006). *The Gift of sharing*. Proceedings of 23c3 Chaos Communications Congress, Berlin.
- (2007). Free software and the market. Paper presented at EGOS 2007, Vienna.
- Georg Simmel. (1906). The Sociology of Secrecy and of Secret Societies. *American Journal of Sociology* Vol. 11, no. 4.
- Slater, Don. (2002). From calculation to alienation: disentangling economic abstractions. *Economy and Society* Vol. 31, no. 2.
- Strathern, Marilyn. (2005). Imagined collectives and multiple authorship. *Code. Collaborative ownership and the digital economy*, Ghosh, R. A. (Ed.). The MIT Press, London.
- (1996). Cutting the Network. *The Journal of the Royal Anthropological Institute*, Vol. 2, no. 3.
- Thomas, Nicholas. (1991). *Entangled objects*. Harvard University Press, London.