Future Internet Scenarios to Further the Art of Feminist Technology Creation

Maria K. Udén
Department of Business Administration, Technology and Social Sciences
Luleå University of Technology, Sweden
maria.uden@ltu.se

Ana María Martín Castillejos
Department of Applied Linguistics to Science and Technology
School of Architecture
Technical University of Madrid
am.martin.castillejos@upm.es

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ABSTRACT

The reason behind the development of the Future Internet (FI) research field is an increased awareness of several critical shortcomings of the Internet arrangement of today. On the technical side there are issues of performance, reliability, scalability, security. Moreover societal, economical and business aspects have emerged. FI is an urgent and also structurally ideal arena for furthering the art of feminist technology creation. The FI discussions incorporate small, incremental evolutionary steps as well as complete redesigns. The rigorous frameworks for technology studies that have been developed within the feminist tradition can be tried out and applied to support interventions in the FI field. One of the techniques used in FI exploration is definition of scenarios. Scenarios can be used as starting points for technical innovation or used as illustrations of de facto technological appeals. One possibility is to extrapolate inner landscapes as evoked in feminist scholarship and arts, via scenarios to ideas about construction and design of information and communication technologies.

Keywords: Future Internet, scenarios, gender studies, equality, feminism, inner landscapes

1 INTRODUCTION

The discussions are currently intense about The Future Internet (FI). Broad participation is generally invited and welcomed. It is not obvious, however, how the hitherto less involved people, sectors and locations shall

- Capture the topics that circulate, in terms that are meaningful to them, and moreover
- Formulate their dilemmas, ambitions and ideas, so that they make sense in the contexts of the common discussions

In this paper one route is suggested and explored, for capturing the FI discourse in terms known among women's and gender studies. One of the techniques used in FI discussions is the definition of scenarios. In the methodologically proper manner they are used, for instance, as starting points for technical innovation but, probably, they appear as often as illustrations of de facto technological pulls.

The purpose of this paper is to try out the idea of how construction and design of information and communication technologies may be directed by scenarios built from the notion of inner

landscapes as evoked in feminist scholarship and arts. Obviously, scenarios are fantasies about situations and relations. Working with this methodology together with cases and theories from feminist literature studies should, therefore, be a reasonable way to create a link between the FI discourse and the rich tradition of feminist, gender and women's studies.

The FI discourse is an urgent and also structurally ideal arena for furthering the art of feminist technology creation. It is given that women's realities need be represented, and generally the kind of realities that, for different reasons, tend to be foreseen in mainstream research and development but highlighted in women's and gender studies. However, as the scenario method explicitly builds on the imaginative and the expressive, it is interesting to cross the "utility" border also in the engagement of the women's and gender studies tradition, and identify themes that occur with the involvement of imagination. The arts (literature, cinema, sculpture, painting and the many other artistic manifestations) have a capacity to stage thoughts that are not always possible to express in an environment that is defined by the forces that dominate the present. Therefore, it can set genuine and creative processes of technology production going.

2 THE FUTURE INTERNET (FI) DISCOURSE

The strength of the Internet is that the combination of its technical and managerial designs renders a unique openness for people to connect their own networks to it, and for other innovations to be placed on top of, or connecting to it. For instance, the *Transmission Control Protocol*, TCP, which together with the Internet Protocol, IP, constitute the core of the technical paradigm, contains a robustness principle: "TCP implementations will follow a general principle of robustness: be conservative in what you do, be liberal in what you accept from others." (Postel 1981:13) This principle was described in the *Internet Protocol standard* document where the principles for Internet protocols are stated. As imagined by the group involved in the first stages of the Internet development it was essential that:

"The implementation of a protocol must be robust. Each implementation must expect to interoperate with others created by different individuals. /…/ That is, it should be careful to send well-formed datagrams, but should accept any datagram that it can interpret (e.g., not object to technical errors where the meaning is still clear)." (Postel 1980:21)

The open invitation character of the Internet, both technically and organizationally, has led to that discussions among different groups of stakeholders, about technical and organizational strategies and solutions, are intrinsic in its functionality. The first steps when people in different parts of the world picked up and associated to the up-and-coming invention called "the Internet", were not necessarily supported by governments and public authorities. However, the broad political understanding has become that neither the potentials nor the competition introduced by the Internet can be ignored. Currently, there are concerns that certain, functionally critical solutions that have been created along the way of the Internet's development, do not have the capacity to handle the growing amount of use and users. Among the most known is the shortage of Internet addresses and the projected solution in the form of a transfer from Internet Protocol version 4 (IPv4) to Internet Protocol version 6 (IPv6). Also, conflicting interests have emerged as result of the Internet's global impact and its effects across various industrial sectors. As a result there is a discussion going on, about the Future Internet (FI), which is the more technically oriented discourse, and about Internet Governance (IG), where relations between stakeholders and the Internet as an economic and social resource are in focus.

In the time of writing, Wikipedia's text on the topic explains that "the Future Internet is a general term for research activities on new architectures for the Internet". On the technical side

there are issues of "performance, reliability, scalability, security" and overall, the FI discussions incorporate "small, incremental evolutionary steps" as well as complete redesigns, also known as "clean slate" approaches. (Wikipedia, 2013) In this matter the Wikipedia article is valid, as one reasonable way to summarize the situation. In the context of the European Union's research and development funding, the scope goes beyond architecture. A person, who looks for Future Internet research and development in the realms of the European Commission, will find the following text in the introductory sections for several web pages and documents:

> "New layers and technologies continue to be added that have vastly expanded the scope of what we think now as "The Internet". Mismatches between original design goals and current utilisation are now beginning to hamper the Internet's potential." (See, for instance, FIA, 2013, FI PPP, 2013)

The research and development thus funded by EU FI initiatives can very well include developing applied projects with services, as for instance, the OUTSMART project led by French Orange Labs (or a wide range of other projects):

> "The goal of OUTSMART is to contribute to the Future Internet (FI) by aiming at the development of five innovation eco-systems. These eco-systems facilitate the creation of a large variety of pilot services and technologies that contribute to optimised supply and access to services and resources in urban areas. This will contribute to more sustainable utility provision and, through increased efficiency, lower strain on resources and on the environment." (OUTSMART, 2013)

The Internet technology and organization has reached an enormous success in itself and moreover, through its capacity for merging a range of technologies it has affected ICT overall, and multiplied the individual capacities of several other technologies. For several reasons the discussions about the Future Internet do not concern the Internet solely but information and communication technologies at large. Indeed, the FI discourse is about strategic interests as well as very local and very every-day things, from broadband access to timetables for local buses that are made available for mobile phones through so-called 'apps'. The background to why propositions about all these technologies are said to be about the Internet is that this term can currently be used to capture all their evolvement together, including the complex aspects of security, integrity and freedom of speech. The concept of a Future Internet which will supersede the present arrangements exists as a matter worthy of considerable attention, in the interplay between politics and R&D.

Considering the impact that information and communication technologies have in our time, the Future Internet discussion is an urgent topic for gender mainstreaming, and moreover for gender equality activists and feminist scholars. Additionally, the context is ideal for development of feminist and gender studies theory and methodologies in the technology area. The wide-spread use of analogies and metaphors makes it evident that communication is built from inside our heads. For instance, a reference to ecosystems can be noted, in the above quote from the OUTSMART description. There is no restriction as to what levels are more or less suitable (or *tiers* as the term goes, in Internet circles). Not even "pure" technological choices can be ruled out. Vinton G. Cerf is one of the inventors behind the Internet's technical constituents and also one of the initiators for the organizations through which it is managed and maintained. In the following quote we can note that his view on the implications of the computer instructions called TCP and IP is that they are political:

> "The design of the Internet architecture is captured in the TCP and IP protocols. It confers equality on all interlocutors on the network (a supercomputer is treated as equal to a laptop from the protocol point of view). This means that peer-to-peer was built into the network

from the beginning and was kind of rediscovered with Napster, Skype, Bit-torrent, etc. The end devices did not and do not need to know about the topology of the Internet, the number of networks involved, the exact path of packets, etc. There is decoupling throughout the system because it is layered and this has given the system remarkable ability to absorb new technology and to allow what we call "permissionless innovation" - just do it. I think that has significant political implications."(Sifry, 2012)

3 SCENARIOS AND EXAMPLES FROM CURRENT FI PROJECTS

The Internet Society (ISOC) has a major role for the establishment of legitimacy for managerial routines for the Internet. In connection to a display of a scenario planning exercise done in 2009 among a group of appointed leaders in ISOC, the organization defines the scenario method as follows:

"Scenario planning is a methodology used widely in business and increasingly in other sectors to allow organizations to anticipate how the future could turn out. It is particularly useful in an environment of great uncertainty. Scenario planning is neither guesswork nor statistical analysis. It is a structured process to help organizations break free from ties to "the official future" to consider other possibilities that they may confront. The stories that result from this process are intended to reveal plausible courses of events, not probable ones. While they are imaginative, they are intended to make the organization aware of possibilities that could have an impact. The organization then uses the stories as a springboard to help identify robust courses of action that will position it well for any of the possible futures." (ISOC, 2009:2)

Four scenarios are displayed as results of ISOC's exercise, and these are respectively named the *Common Pool*, *Boutique Networks*, *Moats and Drawbridges*, and *Porous Garden* scenarios. Together, they are pictured as quadrants in a coordinate system which is defined by two axes that stretch between the respective endpoints *generative* vs. *reductive* and *command & control* vs. *distributed & decentralized*. The stories told primarily span over business and access models of different types. The essence of the Common Pool scenario is about:

"… positive "generative" and "distributed & decentralized" properties. Opportunity and growth abound (generative) and there are no insurmountable barriers to entry for those wishing to take part (decentralized and distributed). Disputes and challenges are resolved through competition, as opposed to negotiation or inherited rights." (ISOC, 2009:4)

The qualities signified by the axes mirror the concerns about the ownership and structure of the internet that became topical by the turn of the century. It is difficult to see that any scenario but the first is appreciated by the originators. The narrative of the fourth scenario ends with what in the circles around ISOC was – and is – a dystopia:

"The true potential of an open innovation platform was never realised and individual freedom and the greater good of society was sacrificed in the face of irrepressible market greed and a fear of the alternatives." (ISOC, 2009:12)

Another set of scenarios was developed by the European Union funded project SMART, under the heading TAFI, *Towards a Future Internet*. (TAFI 2010) For the development experts were engaged via reference groups, an on-line questionnaire, workshops and other. Building on these efforts, constructed and refined four scenarios of plausible future socio-economic conditions with differing needs, numbered and named as follows (TAFI 2010:5-6): 1) Smooth Trip 2) Going Green 3)

Commercial Big Brother 4) Power to the People. The values in these four scenarios are not graded as in the ISOC case. Rather, it appears as they can be successfully combined – all but one. As can be sensed already from the title, this scenario is loaded with negative charge:

> "For instance in Scenario 3, a compliant ageing population, the jobless condition of a significant proportion of the rest of the population in Europe combined with the market power of the major players, turns the internet into an escapist channel for entertainment. Thus its prime function is easily served by large commercial interests and a laissez-faire political regime, so it becomes little more than a retail shopping channel with mundane programming." (TAFI, 2010:88)

With some nuance differences TAFI basically addressed the same topics, visions and fears, as were raised in the ISOC group: stakeholder conflicts, regulation, governance and so forth. In essence, the themes are results of empiric situations of concern to the stakeholders behind the scenario exercises. The above examples are fetched from high level discussions about the Internet as an item or object that comes to be through certain organization and correlated actions. Integrated in many narratives are also found more intimate stories that follow some imagined persons' doings. This is typical for the scenario methodology applied to ICT strategies. Scenario descriptions do not necessarily stretch over all the levels from daily life to the governance of the Internet. The scope depends on what it is that the originator wants to affect, demonstrate or explore. The TAFI scenarios all come with the type of scenario that is built around so-called *personas*: fictive or commonly recognized characters. In the ISOC scenarios, various personas turn up throughout and more often as groups than individuals. These personas are often such that were represented among the groups that took part in the exercise, or counterparts in the activities that would engage them on everyday basis. For instance, as follows:

> "In the meantime, the plain folks, who'd been too busy working out the algebras of trust transitivity and the core scaling issues of existing network technologies to attend these multi-week suit-sessions, had scaled new heights of finessing technology and developed ugly-but-functional approaches to critical problems with the Internet." (ISOC, 2009:5)

The TAFI scenarios on the other hand, feature personas from an imagined array of end users. This is often the done in scenarios and, there are some storylines that seem to recur. Scenario one, for instance, is of the recurrent type in information and communication technology cases, that starts with that a person wakes up in the morning, and then travels somewhere:

> "Her first trip to meet her boss in Hong Kong was in less than 8 hours and there was so much to do! Although she knew her well and had worked with her for over a year, they had never actually met offline. Most of their interaction was via chat, email or video. But she was now up for an important promotion ..." (TAFI, 2010: 75)

4 THE EXPERIENCE OF WOMEN AND WOMEN'S FICTION: TWO SIDES OF THE SAME COIN

The contributions from women's and gender studies to the construction of FI scenarios have some immediately apparent directions to take. With background in the longstanding tradition of these disciplines, to take interest in the everyday experience (Smith, 1987) and the labour of care (Tronto 1993), it can already at a first glance be foreseen that their deployment will reveal white spots in the general mapping displayed by FI scenarios.

As an example, in the TAFI set of scenarios it can be noted how security, well fare and the details that make the day possible are left from the description in all but one of the scenarios: the dystopia. The feminist analysis highlights that *especially* where everyday situations work smoothly it is because there is always a web of often unnoticed activities in service occupations and in the households (Tronto, 1997, Waldén, 1982).

For instance, if we start from the TAFI scenario where the heroine flies off to meet her employer in a far Asian destination a FI scenario informed by the collected women's studies knowledge can be made about one of the service staff that keeps the airport running. With thorough preparations to correctly account for the socio-economic conditions that are typical for a person in that position, the context of their families, the care of their children and so forth, can also be accounted for. As in the scenarios produced by ISOC and TAFI above, such scenarios can be built by expert teams. The technical, business and management challenges that come to surface with such carefully addressed scenarios of more complicated character will possibly, to speak with ISOC *help organizations break free from ties to "the official future"* (ISOC, 2009).

However, in this paper we are interested in yet another route: connecting the scenario method to methodologies developed in literature. This can help to express and capture topics that are experienced at a level that is not yet structured in a formalized, established language. Also, it is thinkable that people who do not normally feel comfortable with or motivated to engage in technical topics, and thoughts that are not easily expressed in direct language, can through methods developed from this combination, be heard all the same. Considering the bulk of strategic decisions that are to be taken, and that will need a continuous attention, this is an attractive prospect.

Postmodern texts change the centre of authority and origin in texts, and question the very premises they are based on. They question and demystify the meta-narratives by breaking them into multiple discourses. In this sense, regarding women writing in the postmodern line, we can refer to Patricia Waugh, who states that it is important for women to experience and to explore themselves as human 'subjects' in their fiction, and not to follow the metafictional practice of the fragmentation of the self, in order to deconstruct subject positions in which they have been situated by the male ideologies: "Once women have experienced themselves as 'subjects' then they can begin to problematize and to deconstruct the socially constructed subject positions available to them, and to recognize that an inversion of the valuation of 'maleness' and 'femaleness' will not in itself undermine the social construction of masculinity and femininity" (Waugh, 2012: 25). This is only part of what feminist readings investigate in many postmodernist or traditional texts.

Under this new prism, the family household is reconstituted through a new spatiality and sets of local relations. However, the particular strategies of family-caring work that are observed in women´s real lives and, therefore, reflected in their writings, sustained and constituted at the level of the everyday, are forged through processes that operate, both, at national and global scales. Such processes can also be seen at the scale of the 'very local' (Reynolds & Zontini 2006). Expectations, dreams, fears, hopes are all part of these women's landscapes of home (Dyck and McLaren, 2004; McLaren and Dyck 2004). It is crucial to admit such emotions into the 'making sense' of household settlement strategies, and their location in global relations, immigration policy and localised features of 'place'. This is also the way to understand the significance that the local has in the complex. Feminist geography, women´s inner and outer spaces, the 'everyday', and the local–global relationships are involved in global movements of capital and people in the re-making of places.

5 INNER LANDSCAPES

If the scenario description is a sort of fiction, the art of literature and the methodologies for studying and analyzing literature will have much to contribute to the production as well as understanding (in the sense of deeper interpretation) of FI scenarios. There are various tools to choose

among. As FI scenarios tend to highlight the geographic location it is by association easy to turn to the concept of *inner landscapes*.

The symbolic use of the landscape in literature can be traced to the use of the landscape to symbolize human emotions, mainly negative. We talk then about the use of exterior landscapes to symbolize mental states. The technique was gradually refined, from outwards to inwards, that is, towards the description of "interior landscapes", and to include the topic of the modern city as an object of description in symbolic landscapes. Until Tennyson and Baudelaire, as Hargrove explains (1978:210), "... landscape had been used simply as description or decoration, it had provided a locale for the action or characters, it had consoled the speaker, or it had evoked a mood or atmosphere". Tennyson and Baudelaire use landscapes to symbolize human emotions and, later on, T.S. Eliot uses his literary talent to introduce the novelty of a poetry that deals with concrete landscapes with great realism but that also tells us about moods and atmospheres. (Martín Castillejos, 2006)

Examples of use of landscapes and segments of urban environments in literary compositions in the works of female authors can be fetched from Sylvia Plath. Throughout Plath's production a non-casual relationship between the state of her characters and the weather reoccurs and, elements of fusion between nature and individual are typical of Plath's writings, especially of her poetry.

The sea had a particular role: "My childhood landscape was not land but the end of the land—the cold, salt, running hills of the Atlantic ...". She describes it as if it was the maternal womb, as the uterus where she was conceived and refers to the sea movement with its rhythmic rolling as the "motherly pulse of the sea" (Plath, 1977:123). In fact, in contrast with many children who get scared by the powerfulness of the sea, and do not dare to walk close to the shore, Plath describes how she, being a small child, had to be literally "rescued" from the water by her mother, as she felt completely at ease inside the liquid element.

Her love for the seascape, always in a constant movement, always changing, makes her meditate about how rigid and hidebound the earth's surface is: the mountains and other geographical features are inalterable, and she feels the need for change: "Did my seascape, then, lend me my love of change and wildness? Mountains terrify me—they just sit about, they are so proud. The stillness of hills stifles me like fat pillows. When I was not walking alongside the sea I was on it, or in it ..." (Plath, 1977:128). The return to inland, far away from the sea, represents a tragedy, as if it was the definitive separation from her true origins. (Martín Castillejos, 2006)

Audre Lorde and Sandra Cisneros, on the other hand, give the house a role as symbol for the consciousness, and the collective memory. Their contemporary female stories about growing up deal with the innocence gone, and the necessity of conforming to a life not freely chosen. Obvious conflicts rise, between the heroine's own expectations and society's prospects for her future. If the parents' house is thought of as temporary, one that the heroine wants to leave, pointing to another house (newer, nicer) is also pointing to another self: the self that the heroine wants to be. (Martín Castillejos, 1996).

6 TAKING INNER LANDSCAPES TO SCENARIOS - THE UNIQUE QUALITIES

Without engagement from feminists, the risk is immediate that central dimensions of a functioning society (as well as non-functioning society) are lost for the Future Internet discourse – and for investments in technology and infrastructure, as well as research and development. This would imply strain in the work towards gender equality, and certainly, go against the hopes feminists might have for the future. Scenarios can stimulate new, visionary thinking. On the other hand, there is also a risk that they confirm a consensus or habitual interpretations. Just as we tend to parent the way we were parented, so we tend to educate the way we were educated and, in doing so, we replicate the model of society that we have inherited: a patriarchal one. It is not easy to imagine genuinely new ways for something so utterly familiar to all of us. Observing the expectations that

women writers have for women in general we should be able to pay attention to their claims. The stories of fictional literature are true in another way than say, statistics are. They are complex and indeed, often painful. Importantly, the sentiments take place beyond the good vs. bad categorizations. Sorrow and longing are painful, but also revealing. Such sentiments can be treated as insights and utopias at the same time. From women's writing we should be able to imagine better ways to educate young people properly and prepare them for an equal rights´ society.

Scenarios, just because they are whole stories and not analytic theories, can provide a format for entertaining systemic change. Positive scenarios can depict the interactions among the many parts of our society. There are no simple solutions for a serious reform in our society and not a single reform is likely to survive unless it is done with other parts of a new system that will support it. It is proved that if you just change one thing, the rest of the system will pull that reform back into the old equilibrium. But in order to change everything at once, the kind of holistic, comprehensive vision that a positive scenario can provide is necessary.

Systemic reform is challenging and positive scenarios are intellectually very difficult to put forward. Negative scenarios are much easier—they consist on describing the worst of what we already know. But positive scenarios must have the strength to paint something new under the sun, a new kind of reality. For this reason, positive scenarios run the risk of being rejected after being considered too optimistic and utopian. Just as it is difficult to anticipate technological breakthroughs—it is also difficult to imagine how changes in women´s role are going to affect the whole society and, of course, men see that as a dangerous threat. But just reading what women writers have been writing in the last decades and analyzing the way they describe themselves, their lives, households, expectations, dilemmas, etc. etc. tell us so many things about how our society is changing and how our future as human beings will be that we should pay extremely careful attention to what they say as their fears, needs, expectations, hopes and so on, will shape the future society that is waiting for us and all of us will be affected by it.

7 THE PROPOSITION

How can construction and design of information and communication technologies be directed by scenarios built from the notion of inner landscapes as evoked in feminist scholarship and arts? If, at a first glance, we may consider absurd the very idea that inner aspirations, fears and identity struggles of individual authors (or their fictional characters) can be used in the future Internet´s development, we can remind ourselves of the stories that tend to surround the world´s ICT gurus. Their visions, and their capacities for reshaping reality, are repeatedly publically praised.

Overall, it is reasonable to believe that the corps moral in computer science and engineering, as compared to some other branches, to a lesser degree rests on the idea of discovery of something that exists 'out there', and more on the ability to create functions that have not previously existed. Fictional literature, in its good moments, is a sophisticated form of expression. Above we have shown, among other things, the struggles with contradictory situations that are articulated in fictional literature, via natural, pastoral and urban landscapes, and elements of landscapes and built environments. The idea of a fictional landscape, city or house, where activities of differentiated meanings take place should, in principle, be possible in FI scenario development. Such landscapes can, as well as the sources that have already been used for the purpose, be transferred into templates for visionary outlines for information and communication solutions.

Our proposal is to make the production process more diversified. Where experts on issues of the Internet currently tend to be engaged throughout, experts in other aspects of life and knowledge are engaged in especially the initial steps of the scenario making. The projection of inner landscapes as basis of scenario construction may lead to quite other descriptions of the world than are usual today.

The question is how to maintain, throughout the procedure of translation into technological embodiments, the sophistication in the understanding of human situations, and the many layers of

meaning, which are trademarks of what can be labeled 'good' literature. One possible measure would be, with reference to the above described ethos in computer science and engineering, to openly discuss that the technological systems or products that may be suggested, are results of the imagination of multifaceted individuals. This measure would secure that sophistication in the one end is met by corresponding authenticity on the other.

Personal inclinations and world views, as well as training and talents, will color each interpretation. However, these interpretations can be discussed among larger groups and comments from people belonging to other disciplines should be encouraged.

Regarding the methodological point of using scenarios as a tool, the good news is that their divergence allows different views a respectful hearing. The bad news is that women writers may write forever without acting. So the ideal situation would be to make sure that people engage with the scenarios and use them to either make decisions or implement them. To that end and in order to fully reach our ultimate aims, we should engage not only technical people in the process of developing lists of early indicators but other experts that may have something to say on the Future Internet´s scenarios.

REFERENCES

Dyck, I & McLaren, A. (2004) Telling it like it is … Gender, place and multiculturalism in immigrant women's settlement narratives Gender, Place and Culture, 11(4):513-534.

FIA (2013). *Future Internet*. Future Internet Assembly http://www.future-internet.eu/home/future-internet-assembly.html Accessed 2013-05-03

FI PPP (2013). *The FI PPP programme*. Future Internet PPP. http://www.fi-ppp.eu/about-us/ Accessed 2013-05-03

Hargrove, N.D. (1978). *Landscape as Symbol in the Poetry of T.S. Eliot*. Jackson: University Press of Mississippi.

ISOC (2009). http://www.internetsociety.org/sites/default/files/pdf/report-internetfutures-20091006-en.pdf Accessed 2013-05-03

McLaren, A.T. & Dyck, I. (2004) Mothering, human capital and the "ideal immigrant, Women's Studies International Forum, 27 (1): 41-53.

Martin Castillejos, A. M. (1997) Audre Lorde´s Zami and Sandra Cisneros´ «The House on Mango Street»: Building an Identity, in: Bregazzi, J., Durán, I. et al, (eds.). *Estudios de la Mujer en el Ámbito de los Países de Habla Inglesa*, vol. II, Madrid: Universidad Complutense de Madrid.

Martín Castillejos, A. M. (2006) «Johnny Panic and the Bible of Dreams»: Landscape and Symbolism in Sylvia Plath´s Short Stories, in: Castillo García, G.S., Cabellos Castilla, M.R. et al, (eds.). *The Short Story in English: Crossing Boundaries*. CD-ROM. Alcalá de Henares: Universidad de Alcalá. *Story in English: Crossing Boundaries*. Alcalá de Henares: Universidad de Alcalá de Henares.

OUTSMART (2013). OUTSMART. About the project. http://www.fi-ppp-outsmart.eu/en-uk/about-project/Pages/default.aspx Accessed 2013-05-10

Plath, S. (1977). *Johnny Panic and the Bible of Dreams*. London: Faber & Faber Ltd.

Postel, J. (Edt.) (1980). *Internet Protocol*, RFC 760, USC/Information Sciences Institute.

Postel, J. (Edt.) (1981). *Transmission Control Protocol*, STD 7. RFC 793.

Reynolds, T. & Zontini, E. (2006). Assessing Social Capital and Care Provision in Minority Ethnic Communities: A Comparative Study of Caribbean and Italian Transnational Families, in: Edwards, J., Franklin, J & Holland, J. *Assessing Social Capital: Concepts, Policy and Practice*. Cambridge: Cambridge Scholars Press.

Sifry, M. L. (2012). Timeline Update: Why TCP/IP Is Inherently Political, According to Vint Cerf, One of Its Inventors. TECHPRESIDENT. Accessed 2013-05-10. http://techpresident.com/news/22726/timeline-update-why-tcpip-inherently-political-according-vint-cerf-one-its-inventors

Smith, D. E. (1987). *The Everyday World as Problematic.* Toronto: University of Toronto Press

TAFI (2010). *Towards a Future Internet: Interrelation between Technological, Social and Economic Trends.* Final Report for DG Information Society and Media. European Commission DG INFSO Project SMART 2008/0049. November 2010

Tronto, J. C. (1993). *Moral boundaries: A political argument for an ethic of care*. New York: Routledge

Wikipedia (2013). Future Internet. http://en.wikipedia.org/wiki/Future_Internet Accessed 2013-05-03

Waldén, L. (1982). *Teknikkulturens dubbla förtecken*. Kvinnovetenskaplig Tidskrift, 3/1982, 15-24.

Waugh, P. (2012). *Feminine Fictions. Revisiting the Postmodern.* New York: Routledge Library Editions.