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Publication in IJHE gives wide exposure to your work and adds to the professional literature base of our field. Theoretical papers, literature reviews, and a wide range of genres along with research papers, are invited for publication in the journal. As editor, I strongly encourage submissions to the journal.

Since our last issue, the international community of Home Economics professionals have lost two prominent leaders in the field. Our deepest condolences to their families, loved ones and colleagues.

Dr Kulkanit Rashainbunyawat, IFHE Vice-President Asia (2010-2014) passed away on April 28, 2011. As noted on the IFHE website, “[W]e all acknowledge her love and dedication to the IFHE but also her professionalism and knowledge in the field of Home Economics education” (The International Federation of Home Economics website, 2011)

IFHE President of Honour Dr Doris Badir (IFHE President 1988-1992), Canada, passed away on 7th of June 2011. The International Federation of Home Economics website notes that “[W]ith the death of President of Honour Doris Badir, IFHE has lost an extraordinary Home Economist, a leading personality, a strong IFHE President and a wonderful woman and friend.” To read both obituaries prepared by Geraldene B. Hodelin, please visit <http://www.ifhe.org/61.html>

On a happier note, one of this Journal’s most prolific contributors, Sue McGregor of Mount Saint Vincent University (Halifax, Nova Scotia) was recently awarded the Kappa Omicron Nu Marjorie M. Brown Distinguished Professor Award. Congratulations.

Please do not forget the IFHE XXII World Congress focusing on Global Wellbeing in Melbourne, Australia 16-21 July 2012. For more information, visit <http://www.ifhe2012.org/>

Donna Pendergast, PhD
Editor, IJHE

Interaction of societal development and communication technology

Gerda Casimir

Wageningen University

Abstract

Societal development has always been influenced by technology, and by information and communication technology (ICT) in particular. Communication technology has an impact on daily life: Consumption patterns and daily activities change, the concept of a household is affected, and the organisation of domestic labour is supported by the technology. Despite a vast number of articles written on this subject area, there is still little research done in the field of Home Economics. This aim of the article is to formulate a preliminary research agenda.

Key words: ICT, consumption, household, societal development

Introduction

On a sunny afternoon I showed around a foreign friend of mine. When we drove along the dyke of the river Rhine, we first saw a long line of parked cars, and then a row of people with cameras, binoculars, and long focus lenses, intensively looking towards the flood plains. When asked what they were doing there on this weekday, they answered in a tone as if this was most obvious: "We spotted a Purple Sandpiper." Paradoxically, this nature scene, both the bird watchers and me and my friend going on a little tour, would not have been there without the aid of communication technology. The appointment with my friend was made through e-mail, and the bird watchers reacted to an sms warning, or were informed through e-mail or micro blogging.

The scene described is not only an example of paradoxes of modernisation, it is also an example of how communication technology influences everyday life. In this article, existing literature on this impact is explored. The aim is to formulate a preliminary research agenda for home economics.

Methods

This body of this paper consists of an exploratory review of literature. After a general introduction on paradoxes of modernisation and the relationship between technology and social development, the extensive overview of Geser "Towards a sociological theory of the mobile phone" (Geser, 2004) is taken as point of departure. Since Geser's article stems from 2004, and since the area develops rapidly, additional literature has been accessed through the Scopus database, for the years 2004 up to present. This choice was made since Scopus contains an extensive number of articles, in particular in the social sciences. The following search expression was used: ("communication technology" OR ICT) AND (household* OR domestic OR "private sphere"). The abstracts of these articles have been coded in Atlas.ti

(version 6), a programme for qualitative data analysis, in order to find patterns in the literature. The paper concludes with a preliminary research agenda.

Paradoxes of modernisation

Paradoxes—seemingly contradictory issues—are in fact two sides of the same coin: The increase and decrease of scale in industry, occurring simultaneously, are both the result of developments in organisation, supported by information and communication technology. Globalisation and localisation, mass consumption and individualised consumption patterns, increasing rationality versus growing interest in spirituality, have the same origins (Casimir, 2001). CNN is received in almost every corner of the world, while local newspapers and television stations develop at the same time. The same pop stars are popular in different parts of the world, the same supermarket products can be bought everywhere, exotic food is popular in developed countries. While consuming a limited number of world-wide well-known mass-produced items, an explosion of different consumer goods enters the market. And though consumers are breaking away from the old traditions and try to express their identity with individualised consumption of these consumer goods, they seem to fear deviation from the majority, resulting in a paradoxical situation. The multitude of options leads rather to conformation than to differentiation (Toffler, 1971; Toffler, 1980; Van der Loo & Van Reijen, 1993; Freeman, 1994; De Hart, 1995; Handy, 1995). The website Exactitudes (<http://exactitudes.org>) is a perfect showcase of this phenomenon: everybody different, everyone the same (Versluis & Uyttenbroek, 1994).

Technology and social development

Technology has always been used to overcome the limitations of nature. Men developed farming equipment to increase agricultural production, built dykes to guard us from the water, and invented engines for more efficient production and transportation. This resulted in productivity growth, and consecutively in economic growth. The before-mentioned examples of concentration and decentralisation are supported by technology: the implementation of machines, advanced transportation means, and distributed knowledge and decision power.

One of the consequences of the application of technology in industrial production is the division and subdivision of tasks in component parts (Galbraith, 1967). The concentration of production in factories marked the separation between the work sphere and the private sphere. Industrialisation is not limited to a single society. Production and distribution activities are global rather than national (Giddens, 1997).

Technology is not only an aspect of production techniques; consumer goods are technological artefacts themselves. It is, to a great extent, a matter of “technology push”: Consumers do not ask for new products or new variations of old products; they merely are seduced to buy those products. Or, they are even forced to buy these, when the old alternative does not exist anymore. We could do without a car for ages, but once we discovered places that could not be reached without it, it was difficult to live without one (Gorz, 1978; Casimir, 1982). In the 1980s a futurologist of the Philips company quoted: “We have a lot of solutions waiting for problems” (Van den Berg & Casimir, 1984).

A “demand pull” does exist, though its possibilities are often exaggerated. When consumers buy products, they implicitly ask for them, thus steering production to a limited degree. In some branches—cars, furniture—products are assembled only after ordering, enabling consumers to choose their own specifications and accessories. Here they seem to have more influence. Sometimes, products are used differently from their original purpose, which appears to be an incentive for new developments. Telephones originally had an instrumental purpose, exchanging messages for business use only. When subscription rates became affordable, private use became possible, and telephones are used for personal communication for its own sake, in particular by women (Haddon & Silverstone, 1994; Silverstone, 1994; Frissen, 1997).

As consumers become more articulate, they also can influence producers, in particular when they act in organised consumer groups. There are many examples of consumer actions influencing sales, for environmental or political reasons, for reasons of animal welfare, or for other, more accidental reasons. For instance, phosphate in detergents has been removed after successful consumer boycotts. Actions against oranges and oil from South Africa - before the dismantling of apartheid in 1990—have had some effect, not in the least showing support to African National Congress (ANC). Consumer boycott of fur clothing, in particular sealskin, drawing attention to the slaughtering of baby seals, led to a strong decrease in the manufacturing of fur coats. In the Netherlands, a particular brand of beer had to be taken off the market, after a famous comedian ridiculed it in his show. However, most consumer behaviour is still reactive, and not pro-active.

Communication technology and paradoxes

New information and communication technologies multiply the above-described developments. A continuing increase of globalisation, and centralisation in multinational firms, is accompanied by a decentralisation of decision-making procedures, both enabled by the use of ICT. A further task division in production was made possible by the separation of time and space (Giddens, 1991). While the industrial development caused a strict separation between work and home, with the aid of ICT an opposite development can be observed: Boundaries between work and the private sphere are blurring. People work from home with the aid of ICT (Casimir, 2001) and perform private activities—phoning home, chatting, searching the Internet for private matters - at work (Bouwman & Der Duin, 2007). And though individualisation is still increasing, symbolised by the individualised mobile phone (or better: the smart phone), at the same time, some authors notice a shrinking sphere of individual responsibility and individual decision making (Geser, 2004). The mobile phone gives employees the opportunity to ask on the spot how to proceed. It enables shoppers to consult friends or family members before making a purchase decision. Nicholas Carr even suggests that “Google is making us stupid” (Carr, 2008). On the other hand, consumers are better equipped to make the right choices, by acquiring information even in highly complex urban environments (Geser, 2004).

ICT in daily life

The cell phone, which began as a tool for emergency calls and instrumental usage, is now used for routine cases and expressive communications. The mobile phone is an individual device, directly connected to one person, sometimes even felt as an extension of that individual (Geser, 2004). People feel helpless or even panic when they forget or lose their phones. One of the effects in daily life is that communication is no longer a family matter, but a personal thing. Parents no longer distribute communication among the family members, and thus do no longer control the communication patterns of their children, being no longer the ones answering the telephone. At the same time, as in industry, while being very individualistic, individual decisions seem to decrease. The mobile phone, and all other communication devices and networks—MSN, Hyves, Facebook, Twitter—release people from the need for planning: One does not have to make strict appointments, one can always phone from the supermarket when the shopping list was forgotten; one can always phone home when late for dinner, or contact friends to discover where the best party is.

The device is also used by parents to “keep their children on a leash” by keeping them in contact and controlling their whereabouts.

Thus, when growing children increase their range of independent locomotion and increase their times of absence from home, the cell phone can help to cushion these emancipative processes, thereby making them more gradual and less traumatic by keeping children connected to their parents by a communicative link—however sporadically it may be used. (Geser, 2004).

The consequence is, according to Geser (2004), that individuals may become less likely to learn how to behave conformably in new colloquial gatherings and groups.

What applies to parents and children also applies to, for instance, labour migrants. The transition from one city to another, or from one country to another, can occur more gradually using communication technology. As Geser states, the mobile phone “offers opportunities for complexity avoidance and regressive social insulation” (Geser, 2004, p. 10). More than landlines, mobile phones are used to strengthen already existing networks, and not to expand social interaction to a wider circle. This is because users themselves control who is part of this community and who is not, by deciding to whom they make their phone numbers known. In this way, they have the capacity to re-establish the informal communication typical of traditional communal life, thus “counteracting the losses of communalistic social integration caused by traditional media as well as the depersonalizations of modern urban life” (Geser, 2004, p.10).

Mobile phones accentuate the difference between the “socially integrated” and socially marginalised people. Being without a mobile phone means that no one needs to get in touch with you at all times. The mobile phone incorporates the network of friends and relatives to whom one belongs, a network that is virtually “in” the mobile phone (Horst & Miller, 2005). People use their mobiles to connect, but also to absent themselves from their present surroundings. Women on their own in cafes or on trains use their mobiles as “barrier” signals to indicate to predatory males or other possible intruders that they are unavailable (Geser, 2004).

Consumer-citizen paradox

One of the most pregnant paradoxes in daily life is the consumer-citizen paradox, the first being the one who actually buys products, the second having attitudes and opinions concerning society. Both roles, present in every person, often argue with each other: Citizens' values concerning sustainability or social responsibility might be conflicting with a short-term orientation on personal welfare and value for money (Casimir & Dutilh, 2003).

Consisting of billions of individuals, the position of consumers is a rather weak one. Their power is to buy or not to buy. Companies are addressing them through the market, in severe competition with each other. The position of citizens, however, is different from consumers: They are organised in NGOs and exert power by mobilising the public, campaigning for animal welfare, fair trade, or sustainability; or against pollution, social abuses, or gene technology. In consultation with these groups, companies are each other's colleagues (Casimir & Dutilh, 2003).

The use of communication technology increased the power of NGOs tremendously. Both the speed and reach of information dissemination grew exponentially through computer networks, e-mail services, and other means of communication. Already in the 1980s, years before the introduction of the World Wide Web, action groups communicated through electronic networks like FidoNet, to inform others about, for instance, illegal logging in rain forests. The possibility to harass companies with e-mail bombs, organise demonstrations within a few hours, and spread information all over the world within seconds is not just interesting: It changes the world. Images of natural disasters and acts of terrorism or religious oppression are sent immediately as they happen. The impact of these images cannot be underestimated. Establishing virtual communities in their area of expertise, the NGOs bind their members and supporters, offer them the latest news, and influence consumers on the one hand, and governments and businesses on the other.

Also, individual consumers benefit from communication technology. They are better-informed and more self-confident than ever before, since they can compare prices and characteristics of products and the service of distributors. Holidays and business journeys are more often than not booked through the Internet. Subscriptions to competitions are in many sports only possible on line; result lists are electronically available shortly afterwards, and sometimes even in real time during the competition. Information is exchanged, including tips on where to be for the best party, a rare bird, or the "best" fight.

Increasing or bridging the gap

Discussions are continuing about the question of who is benefiting from these developments. Since young people grew up with Internet and mobile phones, they seem to be ahead of the older generation. However, in the Netherlands, 81% of 12-15-year-old children use the computer and Internet almost daily, opposed to 89% of 15-25-year-olds and 90% of 25-35-year-olds (Statline, 2011). In addition, in one study older people appeared to apply Internet search strategies that were as good as or even better than those used by younger participants. Adolescents might be better in handling the buttons, but they do not necessarily possess better information-searching skills. Efficient and inefficient users of the Internet are

represented in both age groups. Education proved to be a better predictor than age (Van Deursen & Van Dijk, 2008). Highly educated people acquire more experience with Internet: 92% of highly educated Dutch citizens used the Internet daily or almost daily in 2010, opposed to 78% of people with less education (Statline, 2011).

At the outset of the computer age, a huge gap between male and female users could be detected. This gap is obviously decreasing. In Europe, the difference between males and females having access to the Internet decreased from 11% in 2005 to 7% in 2009 (Eurostat, 2010). In the Netherlands, in 2005 73% of men and 62% of women used the Internet almost daily. In 2010, these figures were 87% for men and 82% for women (Statline, 2011). And like women use mobile phones as much as men do, we see them also increasingly making use of the Internet, including social media. In addition, women are increasingly using on-line banking and teleshopping. Only in some areas, like downloading software or music, are women still behind men in Internet use (Eurostat, 2010; Statline, 2010).

Interesting are the opportunities for physically, and possibly also mentally, disabled persons. A person can take on any identity on the Internet, and others cannot see what that person looks like or how long it took to compose a message. Also, the deaf community now has a level playing field with the hearing community, as ICT delivers opportunities not possible beforehand (May & Hearn, 2005).

The last gap to address is the gap between developed and developing countries. Of course, computer and Internet use in developing countries is still lagging behind the developed countries, but some countries benefited from the dialectics of progress: They almost skipped the phase of the fixed landlines and proceeded to using mobile telephony, which is cheaper to install and maintain, in particular in countries that have remote and impassable areas or are heavily distressed by inundations or other natural disasters. Bangladesh is such a country; the number of mobile telephones increased rapidly between 2003 and 2007, from almost zero to 35 million (Zabir, Ashir & Yasuura, 2008).

Four main factors decide the growth of the ICT market: an active market approach of industry; rules and regulations of the government; funding schemes of national or regional banks; and cultural traditions in the country at stake. For example, Jamaica saw a tremendous growth in mobile telephony, while in not-so-far-away Trinidad the Internet became the main means of communication (Horst & Miller, 2005).

A research agenda

The overview of Geser (2004) is—in the light of fast developments in the last decade—dated. For that reason, a literature search has been executed in the Scopus database (2011). A search was performed with the following search expression: ("communication technology" OR ICT) AND (household* OR domestic OR "private sphere") for the years 2004 up to present, yielded 219 titles. Many of these articles had a technical background: They were discussing installations in the home (5), energy or energy saving (18), forms of "smart" technology (13), or other technical subjects. A fifth of the articles (51) stemmed from a more or less technological source, the Institute of Electrical and Electronics Engineers (IEEE), a professional association dedicated to advancing technological innovation, being part of IEEE

conference proceedings, or published in IEEE scientific journals. Sixteen articles were about health and/or ageing. Despite the word “household” appearing in either the title or the abstract of a quarter (61) of the articles (61), they did not address household organisation, domestic labour, or other domestic activities. When excluding the subject areas engineering, computer science, agricultural and biological science, medicine, mathematics, earth and planetary science, immunology and microbiology, biochemistry, genetics and molecular biology, chemistry, physics and astronomy, chemical engineering, pharmacology, toxicology, and pharmaceuticals, 98 records remained.

A second search was conducted with the following search expression: (ICT OR “communication technology”) AND (adolescent* OR youngster* OR “young people”), with the above-mentioned subject areas excluded. This yielded 98 records as well.

Many (32) of these latter articles were about education: using ICT in schools or educational programmes about ICT and ICT use.

Figure 1 gives an overview of the articles per year of publication; Table 1 the codes assigned to the abstracts of the articles.

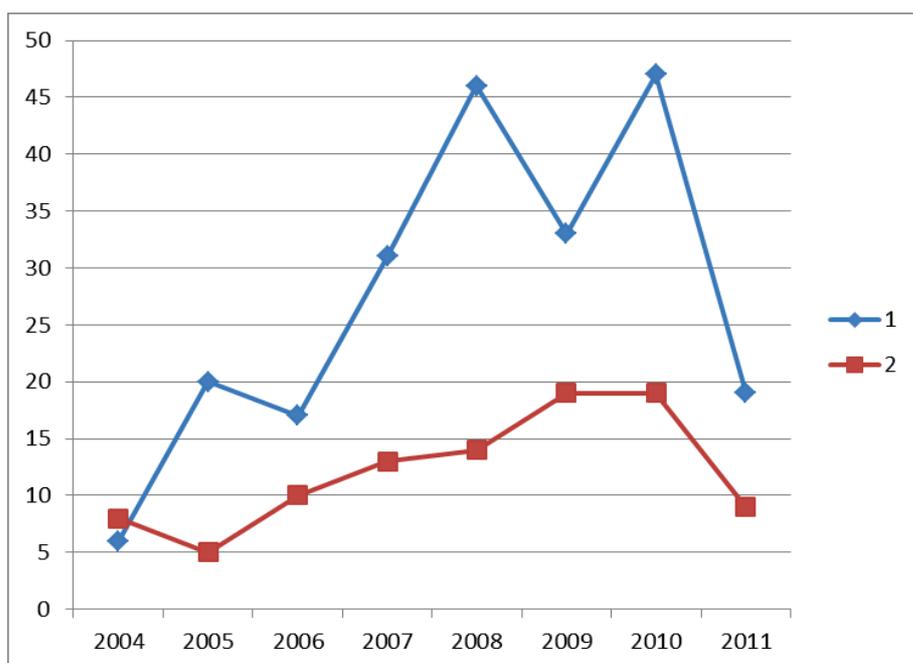


Figure 1 Number of articles found in Scopus retrieved July 26, 2011

Series 1: general articles (“communication technology” OR ICT) AND (household* OR domestic OR “private sphere”)

Series 2: articles about adolescents/young people (ICT OR “communication technology”) AND (adolescent* OR youngster* OR “young people”).

Table 1 codes assigned to abstracts retrieved July 26, 2011

CODES	Series		Totals
	1	2	
ageing	2	0	2
consumption	23	2	25
daily life	1	1	2
disabled	1	6	7
e-learning	2	1	3
education	12	32	44
energy	18	0	18
fashion	0	3	3
gender	12	17	29
health	15	13	28
home	55	9	64
household	61	0	61
peers	0	5	5
relationships	2	7	9
shopping	4	1	5
smart technology	13	2	15

Series 1: general articles ("communication technology" OR ICT) AND (household* OR domestic OR "private sphere")

Series 2: articles about adolescents/young people (ICT OR "communication technology") AND (adolescent* OR youngster* OR "young people").

The literature shows that increasingly, people, and in particular adolescents, make use of communication technology—mobile telephony and the Internet, or integrated forms of the two—for mutual communication and consultation. Constant reachability seems to increase peer group influence and social control. Social control is also exerted in parent-child relationships. With the aid of mobile telephony, physical mobility of children increases, while virtual connectivity enables contact and control (Katz, 2003/1999; Katz & Sugiyama, 2006; Kaare, Brandtsg, Heim, & Endestad, 2007 ; Punamäki, Wallenius, Hölttö, Nygård, & Rimpelä, 2009). These processes are assumed to influence the participation of school-going adolescents in family life and domestic organisation.

On the basis of the above, the following hypotheses can be formulated:

- Due to the application of ICT, school-going adolescents living at home will participate less in family life and domestic organisation, in favour of participating in their ICT-created and ICT-facilitated worlds.
- Through its communication potential, ICT facilitates the integration of family life and improves the effectiveness of domestic organisation.
- ICT helps adolescent school-going children with separated or divorced parents to manage communication with both and enhances the sense of belonging to the households of both parents.

Though many of the articles mention the word “household,” none of them addressed household organisation or domestic labour. The concept itself is also not discussed. The vast application of ICT does not only affect practical matters, it also has an influence on concepts. It is plausible that the idea of what a household is, and to which household someone belongs, has changed as a result of ICT: Communicating on a daily basis with “home,” even when home is a hemisphere away, strengthens the ties and the feeling of belonging with the household that has been left for a long period of time. To test this idea, foreign students, who stay temporarily in the Netherlands, will be interviewed. The main research question is: Does communication technology change their perception of the household?

These ideas are in the process of elaboration at Wageningen University, the Netherlands. Applications for research funding have been submitted; an article on the concept of household will be published in 2011 (Casimir & Tobi, 2011). Whoever wants to join us is very welcome!

Biography

Home economist Gerda Casimir worked in Home Economics teacher training, and in Communication Systems Management. Her doctoral degree was based on ‘The impact of telecommuting on the division of labour in the domestic setting’. Currently she is assistant professor at Sociology of Consumers and Households in Wageningen. Gerda.Casimir@wur.nl

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Craft Cooperatives Using the Internet While Supporting Sustainability and Globalisation

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Abstract

By examining the strategy used by two cooperative groups in two developing countries, Madagascar and Bolivia, it is clear that on the one hand, they can develop strategies that work for each on an individual basis, while on the other hand they work in a similar fashion to maximise their skills and improve their level of diversification. In this way, they can use traditional skills to improve their living standard. These groups are typically very interested in sustainability and find that, by establishing sustainability, the promotion of their work becomes more effective. The Internet provides a means of securing a global market and hence globalisation.

Key words: globalisation, sustainability, craft co-operatives

Introduction

Rural migration describes the movement of people from the countryside into urban centres. This is frequently used as a solution for recurring seasonal and/or continual hardship. The decision to undertake this migration has far-reaching ramifications for the entire family unit but, because it is usually made in times of crisis and as a last resort, reasons and/or alternatives are rarely analysed. Expected and unexpected outcomes may not be fully explored.

Traditionally, the majority of any one country's population practised agriculture and, in this way, utilised most of the arable land within that country. For a variety of reasons, this relationship is changing. Some or all of the land may have been expropriated for other uses, such as mining, road and rail infrastructure, industrial and/or retail development, and even recreational activities. Families may have outgrown the capacity to ensure that everyone could derive a living from the land, with the outcome that some within the family have relocated. For reasons that are unclear, some farmers are experiencing weather and/or insect devastation and crop failures. Due to any or all of the above circumstances, farming families are finding that their formerly reliable means of living is in jeopardy and are required to make difficult decisions. For some parts of the world, relocation has a longstanding history. For others, it feels fresh and raw.

Many studies have examined the viability of rural villages, with diversification arising as an indicator for an improved likelihood for successful living circumstances. The objective of this study is to examine two successful projects - one in a rural area of Madagascar and one in an outlying area of Bolivia—in terms of the product that they are producing, the viability of

producing this product, bringing the product to their clients, and, finally, the sustainability and globalisation of their activity.

This study, with its focus on issues in developing countries, is important for two fundamental reasons. Rural villages are the source of agricultural products. They supply food for a country's people. Equally important, however, is the potential acquisition of foreign capital through exportation of agricultural products to other countries. Meanwhile, the cities in developing countries are burgeoning with the influx of people. The infrastructure cannot support added population. There are few jobs available to those migrating into the cities looking for opportunity. With a lack of jobs and yet a need for resources, people become desperate and resort to crime which in turn further devastates the infrastructure of an already fragile city.

Literature review

Urban centres have become the panacea for the rural poor. Yet, in a study conducted to reveal the relationship between migration and subsequent employment, Wiggins and Diesinker (2007) found that not only was a decent job unlikely, many people experienced extreme difficulty. Coming from the rural areas, where exchange and bartering remained possible in addition to the presence of a support network through friends and family, people were ill-equipped to deal with a city where absolutely every need required cash (Wiggins & Diesinker, 2007). On the other hand, while people are living rurally, they are able to maintain some level of security despite arduous working conditions.

Anriquez and Stloukal (2000) found, in their study on the change of a population's demographics, that people in a rural setting often encourage their youth to leave the land to find opportunities. Assuming that life in the city will be easier, parents and grandparents support this move, while remembering how hard they have had to work all of their lives. The youth likely will never return. They find their way. Some have the good fortune of receiving some education. Regardless, the outcome is significant. They never learn the farming practices of their elders, reinforcing the reasons for not returning. They leave their elders to farm the land on their own. As the parents age, this becomes increasingly difficult. Ultimately the land will need to be sold, resulting in another family's loss of basic resources. The land may never be farmed again (Anriquez & Stloukal, 2000).

Initially, when families move to the city, they might move in with friends or relatives. They will likely have difficulty finding suitable long-term work and housing. For any number of reasons, some within the family unit might return to their village, resulting in difficult and disruptive separations. Therefore, regardless of the difficulties, maintaining a rural presence can often be the better alternative. Finding the resources to stay in a rural setting is the challenge.

In a study of rural livelihoods in the Lake Chad Basin, Bene et al. (2003) stated that inland fisheries played a positive role in village life by providing heterogeneity within the community and therefore improving their strategies for success. The cushion provided by another source of income enhanced the quality of life (Bene et al., 2003). Similarly, in a study conducted by Thanh, Anh, and Tacoli (2005), they discovered that non-agricultural yet income-generating

activities permitted two successful strategies. Money generated from non-agricultural activities was used to invest in the needs of the household agricultural activities. Also, over time, the proportion of non-agricultural activity, in this case craft production, increased relative to the agricultural component (Thanh, Anh, & Tacoli, 2005).

Cooperatives, often initially established to satisfy a particular need, have become a successful way of teaching skills, learning about financial planning, applying marketing strategies, establishing product development, and ensuring effective shipping and handling of incoming supplies and outgoing product. Some of the skills are directly related to the products that they are producing. Others support the cooperative, such as book-keeping skills and learning about the Internet. The premise of the cooperative structure is that the organisation is democratically run from within the membership, that profits are shared, and that some of the profits are held back by the cooperative for future development and/or for distribution to other cooperatives as start-up funds. Aarong, a fair trade cooperative in Bangladesh that was started in 1978 specifically to ensure that the silk farmers of Manikganj were paid, is such an operation today. Today they still make and sell items made of that same silk that they used so many years ago. Now there are over 65,000 artisans, with 85% of them women (Anon., 2010).

When the Asian Development Bank began exploring means of fighting poverty, they found that not only were women's cooperatives successful, the quality of the women's lives, once they were involved with a cooperative, improved. The women were able to work at home, which allowed them to continue with their other responsibilities such as food preparation and the care of children and animals. Also, the women often lacked mobility and/or practised gender segregation. Therefore, they preferred working from the home. Initially, many of the women lacked self-esteem, education, and resources. They did not understand product development or marketing. Through the support of the cooperative, the women became empowered. An exchange of knowledge occurred. Women began teaching other women the skills that they knew. Micro-loans from other cooperatives became a possibility. Today, 30-40% of the women in the Northwest Frontier Province are engaged in cooperative craft production, often in addition to the other work that they do (Asian Development Bank and ASR/Institute of Women's Studies, 2010).

Although a second source of income is liberating for the farmer, the product must still be made available to their clients. For artisans this means bringing their wares to the buying public. This remains one of the biggest hurdles for artisans. For this reason, many have linked with organisations such as Ten Thousand Villages, Serrv and/or Novica to help bring their product to the marketplace in bigger centres and, more importantly, to the international buyer (Wilson, 2010; Anonymous, 2009; Bednar, 2009; Edwards & Hadden, 2000).

Sustainability

Throsby (2001) penned a basic description for sustainability, explaining that the intent of the term was to make us aware of, and to help us strive towards adopting, activities that can continue today without compromising either the living conditions or the ability to maintain the activity for future generations.

McDonough and Braungart (2002) in their book, *Cradle to Cradle*, discuss sustainability in local terms. They look to cultures around the world and honour their differences, often linking these differences to the environmental anomalies that exist locally. For centuries, social entities existed while only minimally affecting the natural world around them. Understanding and maintaining these differences, rather than trying to make all societies behave in the same way, plays a role in sustainability as a whole. Localised art/craft production is a serious and consuming part of this picture (McDonough & Braungart, 2002). The sustainability of a culture's art/craft form achieved by maintaining its meaningfulness in today's context is therefore an aspect that warrants attention. Sustainability of the art/craft forms ensures that the activity itself remains culturally significant. The current generation inherited this culturally significant activity and the current generation must ensure the viability for the future.

Globalisation

In the context of this paper, globalisation refers simply to the strategy of bringing products to an international buying public. Usually, when speaking of cooperative craft output, we are not engaged in overarching trade agreements that are intended for the larger multinational corporations. However, producers still deal with logistical issues as they attempt to stay relevant within the international context.

Objectives

The objectives of this study were to visit and examine artisan cooperatives that are both successfully making and marketing their products. By analysing their strategies, it is hoped that their methods will become helpful in establishing good strategies either for existing cooperatives or new cooperatives in the future.

To accomplish this objective, the author visited two cooperatives—the Association Tambatra, in Soutanana, Madagascar and the Asociacion Artesanal Minkha in Cochabamba, Bolivia.

Association Tambatra Soutanana, Madagascar

The Betsileo people live in the central plateau region of Madagascar. They maintain strong ties with their ancestors, not only by revering them but also by acknowledging that the ancestor's pleasure will reflect on their good fortune while living on the earth. In honouring the dead, they celebrate their ancestors by wrapping the bodies in shrouds called "lambamena." When a family member dies, families celebrate all ancestors by gathering at the family tomb and rewrapping all of the bodies interred therein. This is a time of great celebration and storytelling, remembering all who have gone before them. At this time there is a need for a large quantity of lambamena. Consequently, the women are constantly preparing fibre for the weaving. Betsileo people view life differently from how we do. They see life as a temporary stage, and believe that in fact life is short compared to the length of time that one is dead. They prepare for their own death by living an honourable life, while working to prepare the fabrics that can be needed at any time to accompany their family's funerary rituals and that will help to keep their own life in perspective (Green, 2004).

Because the Betsileo people believe that the silk from the wild and indigenous Borocera moth has the slowest rate of degradation, the most prized lambamena are made of this moth's cocoons (Green, 2004; Peigler, 2004). Due to the ritual nature of the final product, they continue to make the cloth in much the same way as they always have; using the same techniques and tools of spinning and weaving the silk cocoons (Jennings-Rentenaar, 2008). Natural dyeing techniques, also of longstanding tradition, are used to colour the yarn before weaving.

What has changed is the ecological balance of the Malagasy plateau. Over the years, the original tapia forests have been cut down and used to produce the charcoal needed for cooking. The slow-growing tapia tree has been replaced by the faster growing white pine and eucalyptus trees. Both of these species are invasive and discourage understory growth. As an added complication, the Borocera larvae rely solely on the tapia tree for food (Peigler, 2004). Thus, this change has affected the population of this important Betsileo silk producer.

The Betsileo villagers first noticed a reduction in the understory plants within their plateau woodlands. They relied on some of these plants for medicinal purposes. They contacted government officials and studies were undertaken that indicated that the root of the problem was the presence of the white pine and eucalyptus trees. A programme was begun to re-establish the tapia forests (Jennings-Rentenaar, 2008).

The spinners and weavers of the silk have organised themselves into cooperatives. Because wood is a valued commodity in Madagascar, it was essential to establish a common goal that the tapia saplings be left to grow. Because tapia is the sole food source for the silk larvae, the villages were able to accomplish this by attaching a monetary value to the silk, thus leaving the trees as food for the larvae. By changing the dimensions of the lambamena to a size that can be used as a scarf or shawl, the product has become saleable to a larger audience, hence establishing a monetary value to the product.

Men have taken on the role as caregivers of the tapia trees and the Borocera larvae. Together, they have pooled their resources, making this silk fabric available to a wider audience and, in turn, re-establishing the original forests of the central highlands of Madagascar (Jennings-Rentenaar, 2008).

To complete the circle, the Betsileo needed to find a way of selling their scarves and shawls. They connected with the Full Circle Trade Mission as a means of selling their products on the Internet. This organisation has a mission of supporting the sustainable management of natural resources through the fair trade of products and handicrafts, the sale of which helps to support ecologically, economically, and socially sustainable livelihoods. They achieve this by consistently providing beautiful and functional products that the international community can access. The sale of these products tangibly assists both producers and consumers to build healthy, environmentally sound, and sustainable lives. Suppliers of products to this organisation are required to provide careful documentation, ensuring that they fulfil the mission requirements. Supporting wild silk production effectively restores the original tapia forest qualifying this project for this programme.

The women in the cooperative are successfully marketing a product not too unlike their original end product. The only change is simply that they have had to reformulate the dimensions. Colour and weave structure remains the same. The Full Circle Trade Mission gives their product visibility and access to the global marketplace. The mission aids the women in the logistics of shipping and handling. This effort is sustainable and completes the environmental circle ensuring the viability of the indigenous forests. This helps also to support healthy living standards for the villagers of the Malagasy plateau.

Asociacion Artesanal Minkha, Cochabamba, Bolivia

Indigenous men and women of Bolivia, Peru, Ecuador, and beyond have a longstanding knitting tradition. Typically, the products have been hats, mittens, leggings, and footwear, which have been knit in multi-coloured and complicated geometric patterns.

In the early 1990s, a small group of Quechua and Aymara women living in the outskirts of Cochabamba in Bolivia were organised with the business and financial help of Save the Children - Canada into a cooperative knitting group. They had the knitting skills, but lacked bookkeeping and logistical skills to run a more complicated entity than they were used to. The Save the Children–Canada organisation initially supported Minkha to help them receive the training that they needed. The women knit beautiful sweaters in alpaca or the finest pima cotton into contemporary styles. Because most of the women cannot read, they have had to learn to analyse sweater patterns to anticipate how they are going to knit the sweaters. These sweaters are sold on an Internet site, www.minkhasweaters.com or, in conjunction with an Internet site, are sold as special orders with the help of volunteers in North America. All profits are returned to the Bolivian women.

The women knit from their homes and, because of this, are able to integrate this activity within their other responsibilities. They coordinate their knitting with the other knitters in the cooperative. They bring their finished sweaters to a central drop-off point where they are checked for sizing and quality, blocked, finished with buttons sewn on, packaged, labelled, and prepared for shipping. They have hired an Internet-savvy bookkeeper to help them with the orders as well as help them with managing their yarn supply.

The knitters are very successful. They support their families in a way few could ever have imagined. Their success is due in large part to the fact that they are knitting at home. Many of the families are agriculturalists, with added responsibilities. These can be maintained and therefore their food supply is not affected. They are also successful because of their wonderful knitting skills, which they readily adjust to suit the contemporary fashions of the day. They are willing and able to knit to suit the likes of their market. They readily learn new designs. They also buy their supplies from the surrounding area, therefore offering something unique to the North American market, but also supporting the fibre and yarn producers of the area.

The Minkha knitting micro-industry is a Save the Children–Canada success story. The cooperative is now entirely run by the women themselves. They democratically vote in their board members every year. They democratically make all of their own decisions. The microloans have been repaid and today they are providing microloans for similar cooperatives

requiring start-up funds. They also continue to knit products for their own use in the traditional manner.

The cooperative structure

The cooperative structure is typically a positive force. Decisions move from the individual level to the cooperative or even community level. This, in turn, can result in the community's view of the bigger picture, for example with regards to sustainability.

Once established, cooperatives often have enough resources to support start-up cooperatives with microloans.

The Internet

The Internet plays a crucial role in the success of both of the cooperatives studied. The women from Soutanana, Madagascar were able to substantiate claims of sustainability and thus qualified for inclusion on the Full Circle Trade Mission website. This enhanced their visibility and linked them with other cooperatives around the world with similar stories to tell. Through the Full Circle Trade Mission's mandate to educate consumers in ethical purchasing as well as provide a venue for cooperatives such as Association Tambatra Soutanana, the ideas of sustainability and ethical buying power fused, again improving the likelihood for sales. With an office in the capital of Antananarivo that includes Internet access, constant contact is possible with the women via cell phone, permitting the women to retain their preferred rural living conditions (Association Tambatra Soutanana, personal communication, July 4, 2007).

For the Asociacion Artesanal Minkha, the Internet becomes their storefront and management tool. By hiring Internet- and business-savvy office support in the larger centre of Cochabamba, the women can remain rurally situated within their villages. The sophisticated website is interactive, permitting their worldwide clientele to order online while disguising the rural origins of the sweaters (Asociacion Artesanal Minkha, personal communication, February 13, 2009).

Conclusion

Strategies may differ, yet here are two examples of artisan strategies that are successful.

Diversification is helping the people to create a source of income that, in turn, permits them to stay within their rural communities. They retain the same art/craft skills as practised by their ancestors. Sustainability is being addressed in addition to global marketing. By using the Internet, the artisans have access to a larger market, thus improving the feasibility of attracting additional clientele and, therefore, income.

Biography

Teena Jennings-Rentenaar, Ph. D., is an associate professor in Clothing, Textiles and Interiors in the School of Family and Consumer Sciences at The University of Akron, Akron, Ohio, USA, where she teaches the textile science courses. She is particularly interested in the

sustainability of indigenous arts/crafts and because of this spends time studying museum collections with the hopes of reintegrating skill know-how. She is herself a fibre artist.

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New dimension in silk dyeing for Paithani silk dyers of Yeola

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Abstract

The "Paithani" silk sari is a textile that is celebrated worldwide. However, the dye used to colour the silk bleeds colour and affects the quality of saris. To compete in the global market, it is necessary to make the dyers aware of the correct technique of silk degumming and dyeing. Change in their traditional practices indicates acceptability of the new technique in their routine.

Key words: Acid dyes, Natural dyes, dependant variables, Colorfastness properties, post-training evaluation.

Introduction

It has been commonly observed that silk saris find a superior place in an Indian women's wardrobe, because of their dignity, splendour, and, of course, status symbol. Silk is loved for its glamour, richness, beauty, bright colours and fashionable looks (Sinha & Kirsur, 1994). According to Meher Castelino (1993), India is surrounded by a rich heritage of textiles and "Paithani" silk sari is a traditional textile of Maharashtra state, India, which is renowned for its workmanship and wonderful creations spanning generations. The heart of this Paithani is its colour and eye-catching design. Silk dyers of Paithani, in their routine process, use direct dyes which do not give colourfast dyeing. Many complaints regarding bleeding of colour and the quality of dyed silk used to be received from customers.

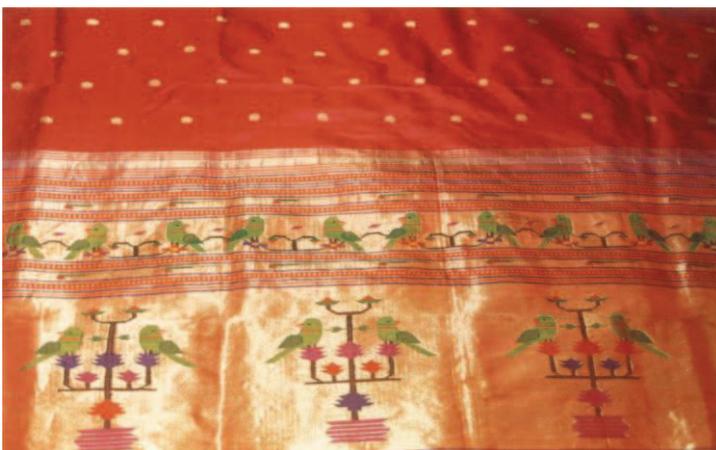


Figure 1 Traditional "Paithani" Sari

Need for the study

The present study relates to the silk dyers of Yeola (Dis.—Nasik, Maharashtra) and the degumming and dyeing of silk used in highly artistic Paithani saris. Data collected for the present study indicates that the crude traditional methods of degumming and dyeing used by the dyers of create a problem during the weaving process and cause colour bleeding during dry-cleaning. It was observed that if dyers want to fulfil the market demand, they needed to change their techniques of degumming and dyeing of silk in order to produce high-quality Paithani saris.

Objectives

- To know the present practices of silk degumming and dyeing.
- To reveal the disadvantages of traditional methods.
- To introduce to dyers a new technique of dyeing and degumming.
- To make dyers familiar with “silk shade cards,” which would assist them to gain knowledge of shades and to achieve colours as per customers’ demand.

Methodology

1. Location of the study: Yeola, Dist: Nasik (M.S.)
Yeola is a small town with a population of over 40,000, located in the eastern part of the Nasik district. It is the epicentre for Paithani weaving. Yeola was selected as the location for the study as it is the area where most Paithani saris are manufactured.
2. Sample size: 40 participants were selected from self-help groups of the National Bank for Agriculture and Rural Development (NABARD). Random sampling was used to select participants from 10 self-help groups within the dyers’ community.
3. Pre-testing was carried out to study dependant variables such as participants’ knowledge, skills, and attitudes. Pre-training evaluation required participants to use rating scales to respond to 20 items regarding their knowledge, skills, and attitudes towards new techniques.
4. Dyers were introduced to correct techniques for degumming and dyeing silk were taught about fastness tests for dyed silk yarns.
5. Post Testing: In post-training evaluation, dyers used rating scales to indicate their assess towards the new techniques of dyeing.
6. The researcher carried out the fastness tests for silk samples dyed using the traditional method, and samples dyed using the new technique. This alerted dyers to the quality of dyeing achieved through both techniques and the importance of colourfastness.

Materials and experimental methods

Data collected during the present study show that the Yeola dyers' traditional method of degumming and dyeing silk creates problems during the weaving process. Although this dyeing profession is passed on through generations, the use of low-quality dyes causes colour bleeding. Training was given to Yeola dyers in order to overcome these problems in silk degumming and dyeing.

Traditional method of silk degumming

The purpose of silk degumming is to remove Sericin. Sericin is the protein which is present in the raw silk and which makes the silk coarse, affects lustre, and obstructs dyeing. The traditional method of degumming used by dyers of Yeola was very harsh and did not remove all of the Sericin. In the traditional method, the silk is boiled in water in a copper vessel along with soda ash, soap and coconut oil for about 1 to 1 ½ hours. The hank is rinsed in cold water and twisted harshly with an iron rod. Material to liquor ratio (M: L: R), temperature, and PH are never measured.

Drawbacks of the traditional method of silk degumming

- The copper vessels used for degumming produce metallic salts in the dye bath solution which affect the lustre of the silk (Gulrajani, 1994)
- Excessive use of soda ash and soap weakens the silk. The hydrosulphite of soda affects the fibrion structure of silk (Gogoi, 1998)
- Prolonged boiling of silk affects the silk's lustre (Gulrajani, 1991)
- The rotating and harsh twisting of the yarn using the wooden rod causes breakages in the yarn and difficulty during warping.

New method of silk degumming:

This new method is taught to the dyers during training programmes. In this method, the silk hanks are suspended on stainless steel rods and immersed in stainless steel vessels containing degumming soap solution. The temperature of the bath is slowly increased and the hanks are treated at about 95^oC for 30-45 minutes. During this period the fibres swell and become sticky and the gum dissolves. The hank is removed, and washed thoroughly 2 to 3 times with lukewarm water and then with cold water to remove all traces of soap, as otherwise the soapy impurities tend to fix themselves on the fibre causing discolouration and difficulties in dyeing (Maulik, 2004). A comparison between two methods is given in Table 1.

Table 1 Comparison between the traditional and new methods of degumming

	Quantity of Silk	Amount of Water	Soda Ash	Soap	Time	Concentration (M:L:R)	Temp.	M:L:R
Degumming by traditional method	1 Kg. approx.	Approx.	100gm	100 gm	1hr.	Not measured	At boil	Not fixed
Degumming by new method	1 Kg.	30 times OWM	-	Degumming soap 20% of OWM	30 to 45 min.	p ^H 5-6	90 ⁰ to 95 ⁰ C	1:30

OWM- On Weight of Material

Traditional method of silk dyeing

According to Venkidusamy (1994), silk is dyed with the application of acid, basic, mordant, vat, and reactive dyes. Acid colours are widely used to dye silk in various bright colours as they have good fastness properties, and natural dyes are becoming more popular due to the hazardous nature of chemical dyes (Gahlot, 1996). However, the Yeola dyers are using direct dyes, which reduces the quality of Paithani.

In the traditional method, the silk dyers use a "Bhatti" (a stove fired on charcoal) for dyeing. The silk is boiled in water with dye powder and common salt for 30 minutes and is then rinsed two or three times.

Drawbacks in traditional method of dyeing

- Use of low-quality dyes causes colour bleeding.
- Lack of control of temperature, concentration, and time reduces the quality and lustre of silk.
- Achievement of exact desired shade is not possible due to lack of knowledge of percent shade calculation.
- Combined degumming and dyeing in a single bath affects the fastness properties of silk (Venugopal, 1994).

New method of silk dyeing with acid dye

The training programme taught dyers the new method of silk dyeing, which includes dyeing with self shades, and creating dye mixes containing certain percentages of shades. Dye is dissolved in a small amount of water. The dye solution is then heated and added to the vessel containing the required amount of water and Glauber's salt. The temperature of the bath is raised gradually to 90⁰C and this temperature is maintained for 30-45 minutes. At the end of this dyeing process, silk hanks are lifted and 1-2% of glacial acetic acid (OWM) is added into the dye bath. Dyeing is continued for a further 10-15 minutes. After dyeing, yarns are washed in water two or three times, then rinsed and brightened with the help of a dilute solution of acetic acid (Prabhu & Vijayendra, 1998).

New method of silk dyeing with natural dye

In recent years, there has been a revival in the awareness of the importance of using environmentally friendly natural dyes. Thus, this study taught dyers how to dye silk using natural dyes. The ingredients used are listed in Table .

Table 2 Ingredients used

Natural dye	Lac powder
Acetic acid	2-3% OWM
Water	30 times OWM
% shade	20%
Temp.	9-95 °C
Time	30-45 min.
Mordant	Alum

Lac powder is dissolved into a small amount of water and the solution is boiled and filtered. This filtered dye solution is added into the water (OWM) and the dye bath temperature is raised. Silk hanks are immersed into the dye solution after acetic acid is added. The dye solution is boiled at a temperature of 90-95°C and mordanting is carried out.

Mordanting with alum

Natural dyestuffs needs additional metallic compounds, called mordants, to make the colour permanent. Alum, chrome, iron and tin are some chief mordants used on silk to darken and brighten colours (Subrata, 1992).

Table 3 Comparison between traditional and scientific method of silk dyeing

	Traditional Method	Scientific Method for Acid Dye	Scientific Method for Natural Dye
Silk	1kg.	1kg.	1kg
Water	Approx.	30 times OWM	30 times OWM
Dye Type	Direct Dye	Acid	Natural
Dye quantities	Approx.	As per % shade on shade card	Lac powder
Acetic Acid	-----	1-2 %	2-3% OWM
Salt	Approx.	10% Glauber’s Salt	----
Coconut oil	3-4 drops	-----	90-95 ° C
Temp.	At boil	95%	30-45 min.
Time	30 min.	30-45 min. for entire process	20%
pH	-----	6-7	Alum/ Stannous Chloride

Result and discussion:

In this study, the dependent variables were studied after the participants had engaged in the training. These variables were tested by using rating scales.

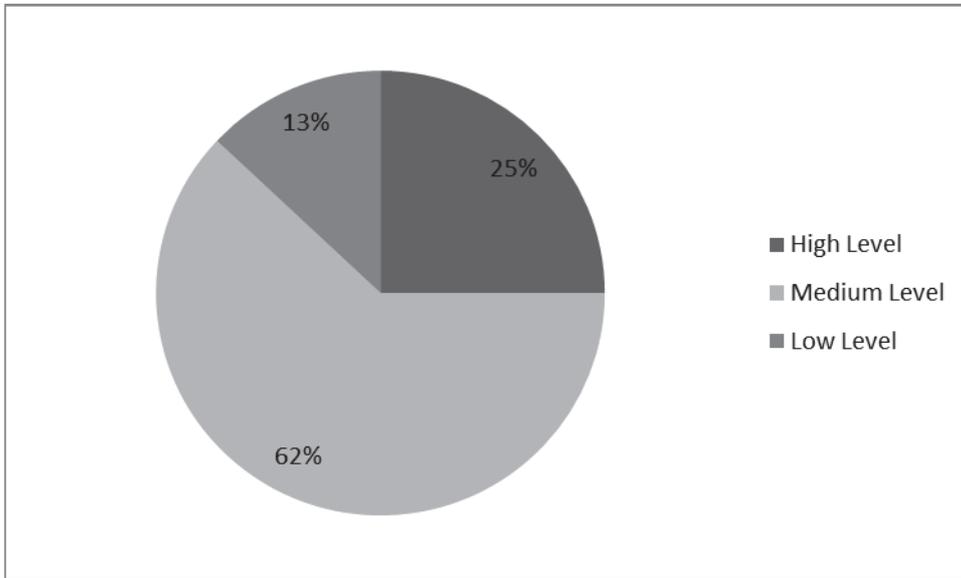


Figure 2 Knowledge gained in silk degumming and dyeing.

Figure depicts that 25% of participants attained a high level of knowledge, 62% gained a medium level of knowledge, and 13% achieved a low level of knowledge regarding the new method of silk degumming and dyeing.

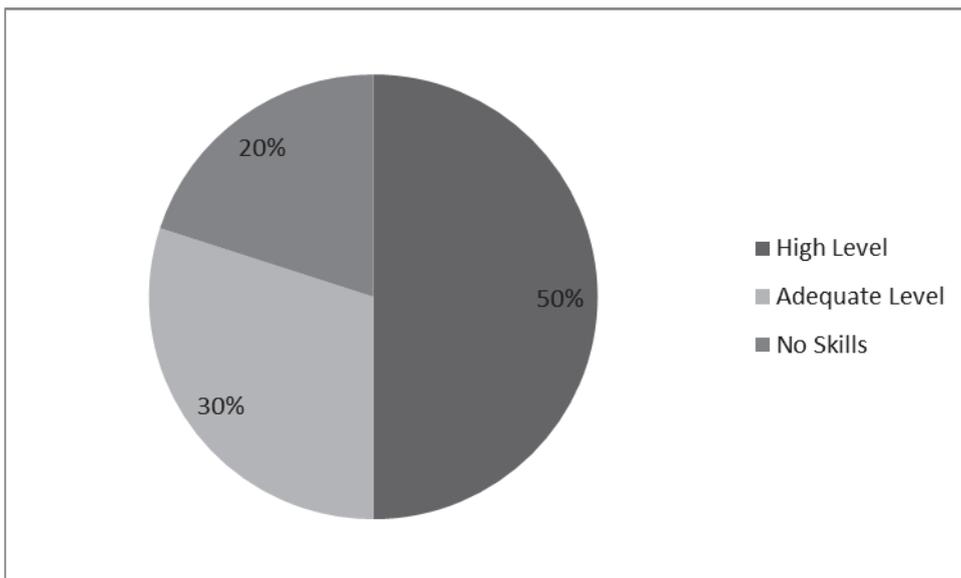


Figure 3 Extent of skill in silk degumming and dyeing

Figure 3 shows that 50% of participants acquired a high level of skill, 30% achieved an adequate level of skill, and 20% did not acquire skills in the new method of silk degumming and dyeing.

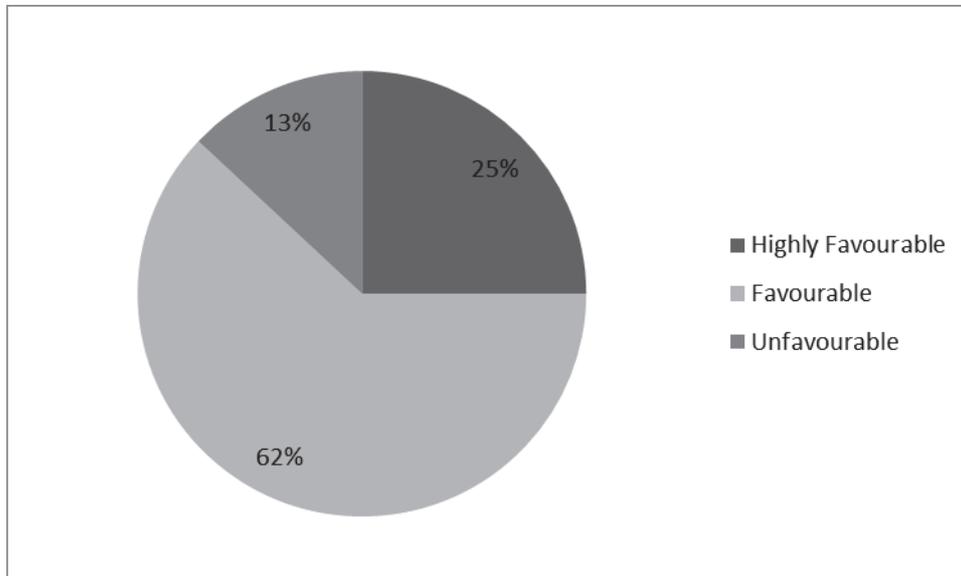


Figure 4 Attitude towards the new technique

Figure shows that 25% of participants reported highly favourable attitudes, 62% reported favourable or positive attitudes, and 13% reported unfavourable attitudes towards the new technique.

Comparative study of fastness of samples dyed with traditional and scientific technique

The researcher carried out the testing of dyed silk in Texan Laboratory, Thane, Mumbai. The researcher tested the colourfastness of silk dyed with the traditional method, and silk dyed with the new method.

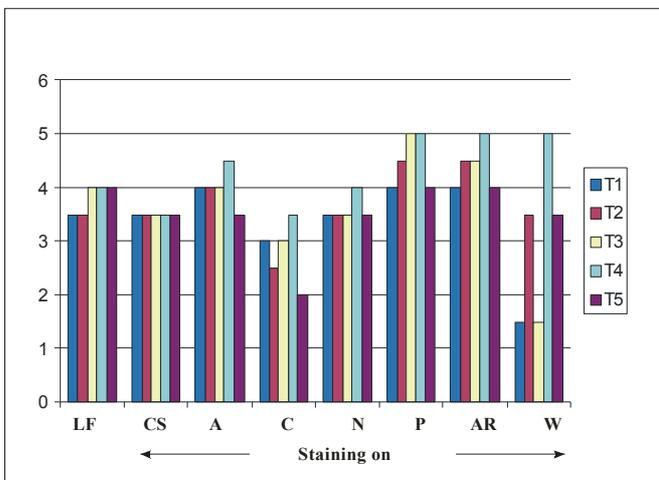


Figure 5 Colourfastness to light and washing for samples dyed with the traditional technique

Colourfastness to light of all dyed samples was tested under a (Mercury Ballasted Tungsten Filament) MBTF lamp. **Figure** shows that the sample dyed with T1 (Rodamine B-2.5% and violet B - 0.5 %) using the traditional method showed poor to fair colourfastness to light. Similarly the sample dyed with T2 (Green V - 3.5% and Yellow M -0.5%) showed poor to fair light fastness. Colourfastness to light for the samples dyed with T3 (Rodamine-2.5), T4 (Rust Brown-2%), and T5 (Maroon V-4%) using the traditional method demonstrated fair colourfastness to light. None of the samples dyed using the traditional method showed excellent colourfastness to washing (ISO: 105/c06 A1M at 40°C). These results indicate that the samples dyed with the traditional method have an undesirable level of colourfastness to light and washing.

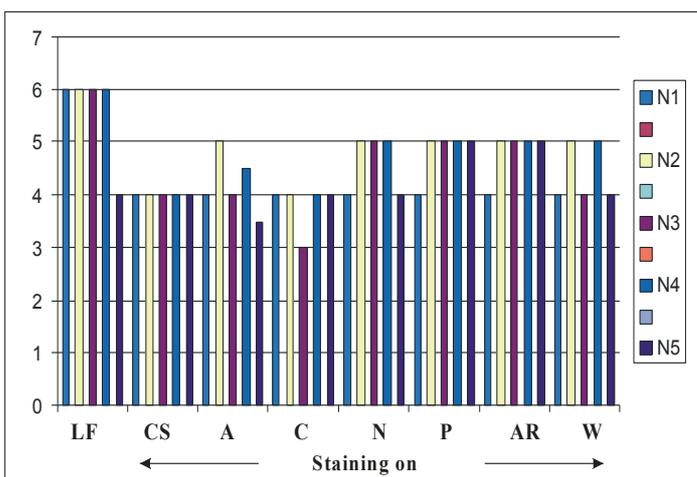


Figure 6 Colourfastness to light and washing for samples dyed with the new technique.

Figure indicates the colourfastness to light and washing fastness of samples dyed with the new technique. Excellent colourfastness to light was demonstrated for N1 (Red 2% Orange - 1.7%), N2 (Yellow GLL 3%—Red- G1%), N3 (Red3-BN), and N4 (Blue 2G 2%- Yellow GR 1%). N5 (Turkish Blue GL-2%- Chrysophenine 3GH/C-2%) showed fair to good colourfastness to light. The test for colourfastness to washing was carried out using “Laundrometer” (ISO: 105/C06A1M, at 40c). Colourfastness to washing was very good for N2, N3, and N4, and good for N1. Only N5 showed fair to good colourfastness to washing.

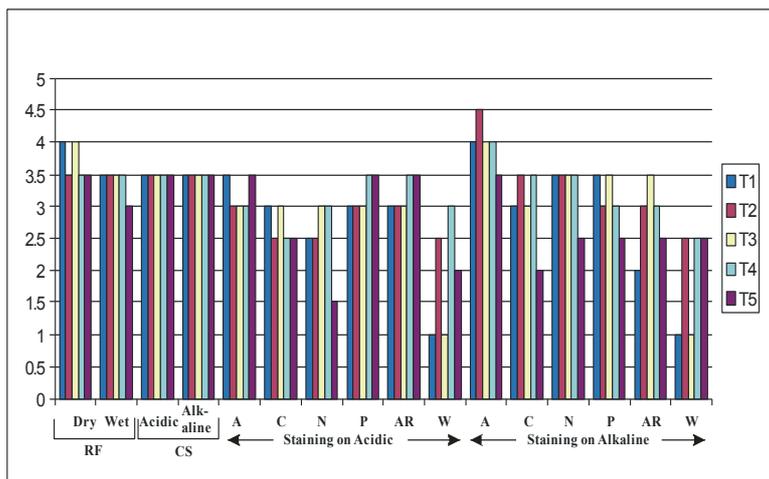


Figure 7 Colourfastness to rubbing and perspiration for samples dyed with the traditional method

The test for colourfastness to crocking (rubbing) was carried out on “Digital Crockmeter” (ISO: 105/X12) and results are presented in **Figure 7**. It was observed that colourfastness to rubbing was fair to good for T2, T4, and T5 when dry, and was good for T1 and T3 when dry. When wet, samples dyed with the traditional method showed fair colourfastness to rubbing for T1, T2, T3, T4, and T5.

Colourfastness to perspiration

The test for colourfastness to perspiration was conducted using both acidic and alkaline solutions of perspiration (ISO: 105/C6A1M at 40°C). Graph 6 shows that samples dyed with the traditional technique had fair to good colourfastness for T1, T2, T3, T4, T5, in acidic and alkaline solutions. In an acidic medium, staining on acetate, cotton, and nylon was poor to fair and very poor for T5 samples.

In an alkaline solution, staining of silk on acetate, cotton, nylon, polyester, and acrylic was fair to good, and on wool was very poor to fair, for all samples.

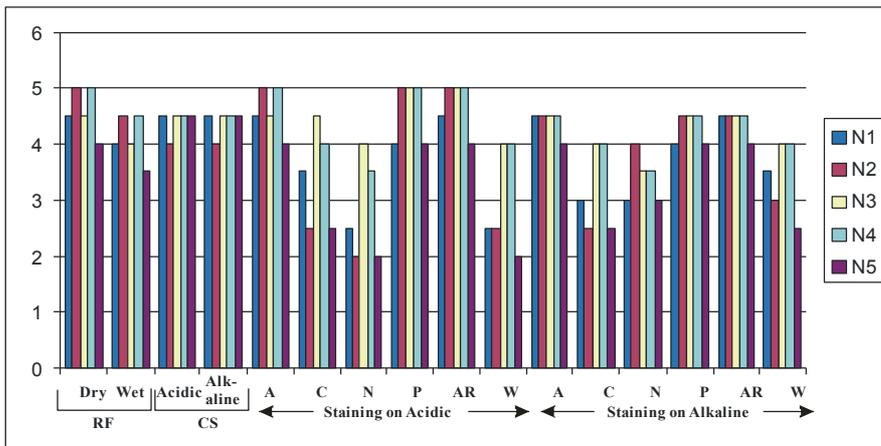


Figure 8 Colourfastness to rubbing and perspiration for samples dyed using the new technique

Colourfastness to rubbing and perspiration for samples dyed with N1, N2, N3, N4, and N5, using the new technique, was assessed. Colourfastness to rubbing was good to very good for all samples, when dry and when wet, and in acidic and in alkaline solutions. It was found that in the acidic solution, staining on acetate, polyester, and wool, but not on nylon, was slight to negligible for all samples. In the alkaline solution, staining on acetate, wool, polyester, and nylon was slight to negligible, but was considerable for cotton. These results indicate good colourfastness to perspiration for the samples dyed with new technique.

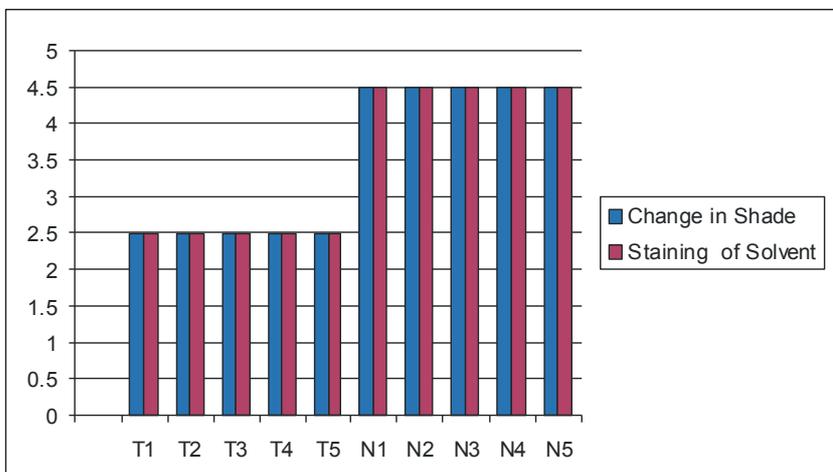


Figure 9 Colourfastness to dry-cleaning for silk dyed with the traditional and new techniques of silk dyeing

The test for colourfastness to dry-cleaning was conducted for the samples dyed with traditional technique as well as the new technique of dyeing.

All samples dyed with traditional technique (i.e., T1 to T5) showed poor to fair colourfastness to dry-cleaning and poor to fair staining of solvent. The samples dyed with the new technique (i.e., N1 to N5) showed good to excellent fastness to dry cleaning and staining of solvent was good to excellent.

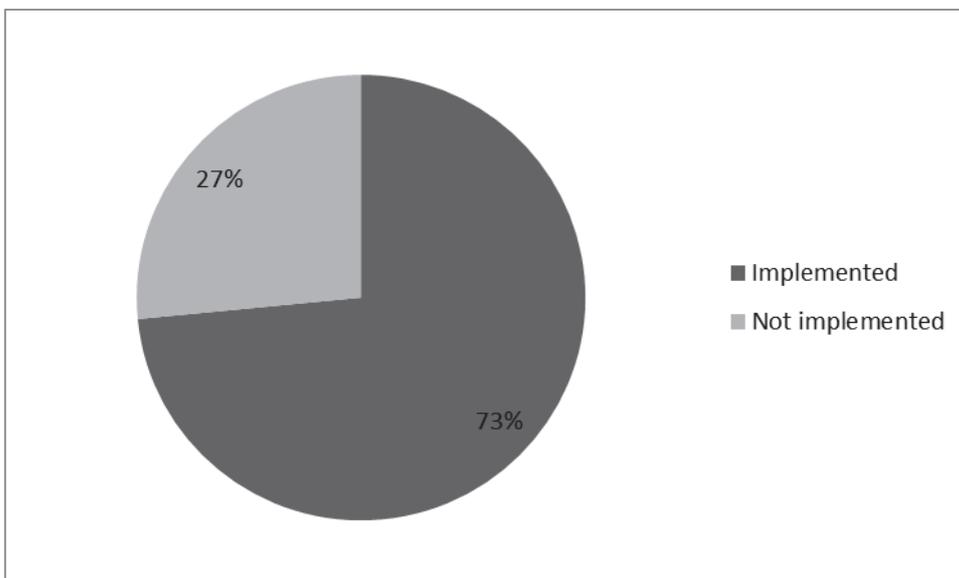


Figure 10 Percentage of participants who implemented the new technique in silk degumming and dyeing in their professional routine

Figure 10 shows that after participants were trained and made aware of colourfastness tests, more than 72.5% of participants felt the new method is better than traditional method. The new method gives fast colours and perfect shades, and maintains the lustre of silk. The participants who did not adopt this technique (27.5%) may have been concerned about the limited availability of acid dyes and acetic acid, or believed that the new technique was too time consuming given their heavy schedule of weaving.

Conclusion

The post-training evaluation shows tangible changes among the dyers of Yeola, namely, their acceptance of the new, improved technique in their routine practices. An evaluation of the overall impact of the training indicated that more than 60% of the trainees accepted the new technique over the traditional technique.

Recommendations

The following recommendations are given by the researcher:

1. Capacity-building Intervention: Dyers in the Yeola town do not have any single organisation to unite them and assist them to gain the bargaining capacity necessary for capturing the market and bulk-buying raw materials. Group dynamics would need to be considered during the establishment of a cooperative society of dyers.

2. Quality-control Laboratory: The quality of Paithani saris depends on the quality of the silk yarn, the dyeing process, and the jari yarn. Fastness tests are necessary to ensure that customers' demands regarding quality are met. The unavailability of a facility in which to conduct such tests may result in continued poor practice and dissatisfied customers. Therefore, the establishment of quality-control laboratory in Yeola is important.
3. Standardisation of Eco-labelling of Paithani: Introduction of eco-labelling standards for Paithani would allow them to be more easily promoted as an exportable item, particularly to European and US markets.

Biography

Kavita Patil, Ph.D., Associate Professor in S. M. R. K. - A.K.- B.K. Mahila Mahavidyalaya , Nashik, affiliated to S. N. D. T. Women's University, Mumbai. She attended several international, National conferences and presented research papers. She won " Best Poster Award" in National conference. Kavita is a member of Indian Science Congress, Textile Association of India, All India Home Science Association, Textile Fiber Society, and ARAHE. She was Editor of Proceeding of National Seminar organized by institute. She is a Member of Board of studies in Textile Science and Apparel Design, Member of Faculty of Home Science and Member of subject committee of S. N. D. T. Women's University, Mumbai. Presently, she is working as an expert for documentary on "Paithani". Email:kavitapatil26@gmail.com

Vimal Adhau, Ph. D., Retired Reader from Matoshree Vimalabai Deshmukh Mahavidyalaya, Amaravati, affiliated to S. G. B. Amaravati University. She attended several National Conferences and worked as a resource person in conferences & workshops. She is a recognized Ph. D. Guide and guided number of Post Graduation & Ph.D. students. She also undertook Major Research Project on " Maharashtra Traditional Art" sponsored by University Grant Commision, New Delhi.

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Better citizens? The relationship between home ownership and religious and political volunteerism in the United States

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Abstract

What is the relationship between homeownership and citizenship, as measured by religious and political voluntarism? Tenure is a matter of choice. Use of a choice variable as a key independent variable in estimations leads to omitted variable bias. With this in mind, this study uses before and after comparisons with two waves of Panel Study of Income Dynamics (PSID) data. The expectation is that estimating the relationship between homeownership and religious and political voluntarism may be less clouded by omitted time invariant variables.

This study finds no significant relationships between homeownership and citizenship as measured by religious and political voluntarism given data at hand, variables used, and estimations based on before-and-after comparisons. The implication of this study is that individual community participation as measured by religious and political voluntarism is not stifled by tenure decisions. The assumption that homeowners are better citizens resulting from increased religious and political voluntarism may be unfounded.

Key words: homeownership, tenure, political voluntarism, religious voluntarism, citizenship

Introduction

What is the relationship between homeownership and citizenship, as measured by religious and political voluntarism? The citizen volunteer gives time and effort as a means of maintaining humanitarianism (Cohen, 1960). Sieder (1960) states that it is imperative for citizens to actively engage themselves in this improvement process. With the hopes of increasing positive outcomes, policy supported by taxpayer dollars has historically encouraged and favoured homeownership in the United States (U.S). Rossi and Weber (1996) state policies that intend to improve expected homeownership outcomes are supported by weak and inconsistent evidence in literature. On average, US consumers prefer owned to rented property. According to the US Census Bureau (2005), by the second quarter of 2004, homeownership rates reached a historic high of 69.2%. Theory also indicates ownership as the tenure preference (Morris & Winter, 1975).

Dietz and Haurin (2003) acknowledge an association between homeownership and outcomes including those related to wealth building, household mobility, labour force behaviour, housing maintenance, social and political activity, child outcomes through the provision of a more stable environment in which to raise children, and health, including better environmental health through proper home maintenance. Dietz and Haurin also observe that much of the previous 30 years' literature related to homeownership outcomes has been theoretically or technically deficient.

One such deficiency concerns omitted variable bias. Motivation and other similar factors may be relevant to the relationship between homeownership and outcomes, but omitted from datasets. These omissions lead to omitted variable bias. Minimising omitted variable bias is crucial to obtaining credible results from estimations. In an attempt to reconcile some deficiencies, this study seeks a better understanding of the relationship between homeownership and religious and political voluntarism.

Homeownership, volunteer, and voluntarism defined

The term homeownership refers to the state of living in residential properties whose tenure status is owned. The word volunteer is used to indicate the act of freely offering oneself as a volunteer (Webster, 1971). Volunteers are defined as those who freely work without pay or material benefit (Marshall, 1964; Sieder, 1960; Verba, Schlozman, & Brady, 1995; Wilson & Musick, 1999). The narrowest definition of voluntarism refers to the principle of using or relying on voluntary action to do or sustain something (Webster, 1971). Per Merriam-Webster (2009), voluntarism is synonymous with volunteerism. The United Nations (2008) recognises that volunteers, regardless of national identity, play a crucial role in human development and social change.

Voluntarism as an appropriate measure of citizenship

Per Kymlicka and Norman (1994), citizenship may take two forms. First, legal membership in a community defines legal citizenship. Second, extent and quality of community participation defines citizenship as desirable activity. Measuring citizenship based on desirable activity places emphasis on personal virtue and community responsibility. This study focuses strictly on citizenship as desirable activity. It may be easy to see why political voluntarism may factor into citizenship. The connection between religious voluntarism and citizenship is less direct, but important nonetheless. Spinner-Halev (2000) notes an overlap between virtues associated with citizenship and what he calls the autonomous person, or one that interprets tradition and experience in a manner unique to that individual. Spinner-Halev discusses that the autonomous person concept overlaps with that of the good liberal citizen, stating these individuals are able to think critically, absorb and reflect on other views, and act with sincerity towards others. Spinner-Haley also observes that public morality depends on private virtues, and religion serves as one mediating factor between the individual and other institutions of civil society.

Theoretical context

Given neoclassical economic theory, it is assumed that consumers are aware of all available choices and make beneficial decisions, a budget constraint restricts behaviour, and consumers have a given set of preferences and are consistent in their preferences. Human capital, as popularised by Becker (1962) refers to activities that establish resources in people; these activities and resources influence future income. As illustrated by Bryant and Zick (2006), consumers increase human capital by investing in themselves, and self investment is an important form of saving.

Although neoclassical economic theory and human capital theory are important to this discussion, they cannot fully explain the intricacies associated with all aspects of decision making related to religious and political voluntarism. Therefore, social capital theory is used to help explain why individuals choose to engage themselves as volunteers. Here, it is assumed that consumers establish relationships with the hopes that these relationships will

lead to some positive gain. Becker (1974) argues that two primary means motivate charitable relationships. These relationships create a synthetic family, where members give to each other to help insure against future loss. Individuals may form charitable relationships as a means of avoiding contempt or gaining community recognition. This fits well in the context of religious and political voluntarism, as both provide opportunity for community recognition and refuge from contempt.

Empirical literature

Homeownership and political voluntarism

Some earlier empirical literature reveals modest to tenuous relationships between homeownership and religious and political voluntarism. For example, homeowners were found to be more knowledgeable about their communities than were renters (Sykes, 1951); community attachment measured by owning a home had a positive influence on local political involvement (Alford & Scoble, 1968); permanence of social relations influences participation (Steinberger, 1981); homeowners were more likely to be activists than were renters (Cox, 1982); friendships play a role in local political activity (Guest & Oropesa, 1986); neighbourhood organisations may be attended in greater numbers and be more effective in neighbourhoods with majority homeowners (Guest & Oropesa, 1986). Econometric drawbacks of the previous studies include use of limited or regional data and insufficient statistical analysis.

Subsequent authors built on this body of knowledge and examined the relationship between homeownership and political participation in a theoretical context using more comprehensive datasets and more sophisticated econometrics. These studies reveal more mixed results. For example, homeowners did not show a significant increase in local political participation relative to renters (Kingston, Thompson, & Eichar, 1984); male and female homeowners were more inclined to vote in the presidential election but were not more likely to work on a campaign (Kingston & Fries, 1994); homeownership had no effect on political attitudes, but did have an effect on voting rate (Gilderbloom & Markham, 1995); social capital accumulation is affected by housing structure (Glaeser & Sacerdote, 2000). Despite using nationally representative data better suited to increasing external validity, the majority of these previous studies do not address the fact that homeownership is a matter of choice. The authors recognise that this choice element prohibits inclusion of unmeasurables or unobservables—important variables to the research questions.

Homeownership and religious voluntarism: social involvement

Regarding religious voluntarism, the scope of literature is broadened as scant empirical work that focuses exclusively on the relationship between homeownership and religious voluntarism exists. As with political voluntarism, earlier social involvement research revealed limited findings. For example, homeowners were more likely to join voluntary organisations and engage in local social networks (Blum & Kingston, 1984); differences between owners and renters are not due to demographic or socioeconomic differences (Ditkovsky & van Vliet, 1984); having close ties in the neighbourhood was positively related to being active in neighbourhood improvement organisations (Oliver, 1984); greater social participation is not an outcome of homeownership (Rohe & Stegman, 1994). Again, subsequent authors were able to use more comprehensive data and econometrics to increase external validity and produce other results. For example, homeownership had a slight impact on social participation (Kingston & Fries, 1994); few differences existed between owners and renters regarding participation in religious social networks (Rossi &

Weber, 1996); homeowners invested more in social capital (DiPasquale & Glaeser, 1999); those who invest time in formal organisations were more likely to be homeowners and more permanent residents (Putnam, 2000).

Conclusions drawn from theoretical and prior empirical work constitute the basis for constructing the main hypothesis. This study uses the hypothesis that homeownership has no relationship with citizenship as measured by political or religious voluntarism among individuals.

Methods

The following utility function (Equation 1) describes the wellbeing of a consumer as illustrated by consumable goods, volunteer opportunities, tenure choice, goods bought with income, education, religion, and taste shifters that may influence utility.

$$U = f(a, b, c, d, e, f, g, h) \quad i = 1...n \quad (1)$$

Where:

Consumable goods	=	a
Volunteer opportunities	=	b
Tenure choice	=	c
Good bought with income	=	d
Education	=	e
Religion	=	f
Taste shifters	=	g
All other goods	=	h
Individual	=	i
Number of entities	=	n

Equation 1. Utility function describing wellbeing as a function of selected variables.

Equation 2 demonstrates that the need for service, desire to serve, and the price of volunteering fundamentally determines supply of volunteers. The price is the cost of leisure time (wage rate of volunteer).

$$Q^S(V) = f(S_D, D_S, W) \quad (2)$$

Where:

Service demanded	=	SD
Desire to serve	=	DS
Price of volunteering	=	W

Equation 2. Supply function for volunteer as a function of service demanded, individual desire to serve, and price of volunteering.

Equation 3 demonstrates that the demand for homeownership is driven by price of homeownership, price of renting, income, and taste shifters. Each variable may uniquely influence demand.

$$Q^D(H) = f(P_H, P_R, I, P_A) \quad (3)$$

Where:

Price of homeownership	=	PH
Price of renting	=	PR
Income	=	I
Taste shifters	=	PA

Equation 3. Demand function for homeownership as a function of price of homeownership, price of renting, income, and taste shifters.

Data selection and variable choice

The Panel Study of Income Dynamics (PSID) dataset was chosen to address the research question. As required by the PSID: “The Panel Study of Income Dynamics is primarily sponsored by the National Science Foundation, the National Institute of Aging, and the National Institute of Child Health and Human Development and is conducted by the University of Michigan” (University of Michigan, n.d.). External validity is strengthened as the PSID is a nationally representative dataset with a large sample size. As of 2005, PSID researchers collected data on approximately 7,500 US families. Internal validity is strengthened as PSID features appropriate variables.

Family-level data feature a number of variables related to voluntarism, and are thus used. Individual-level data do not include volunteer variables, and are not used in this study. The head of the household is defined as follows. The head must be at least 16 years old and hold the most financial responsibility for the family unit. If this person is female, then she is head. If the person is female and married or has been living with a boyfriend for greater than one year, then the husband or boyfriend is head. If this male is somehow incapacitated, then the female is head (University of Michigan, 2009c). Since family-level data are used, it is important to account for action taken by not just by the head, but also the wife. PSID make no distinction between wife and “wife,” and thus the term “wife” captures marriage and cohabitation. Wife may refer to a married or cohabiting woman.

Key independent variables (religious and political voluntarism) ask how often heads (male or female) and family (head and wife) volunteer, measured as a continuous variable with values ranging from 1 to 97. How often individuals volunteer, as opposed to number of memberships, captures the process by which individuals engage in voluntarism. The religious voluntarism measure asks participants about serving on a committee, assisting in worship, teaching, or helping others through programmes organised by place of worship (University of Michigan, 2003a). This measure does not include volunteering through schools, hospitals, or other charities run by religious organisations (University of Michigan, 2003a). This study makes no distinction between different faiths. Political voluntarism consists of that which occurs only through organisations that bring about social change, such as civic or community action, and working for a political party or advocacy group (University of Michigan, 2003b). This measure does not include voting.

Panel data with two time periods and before-and-after comparisons

It would be thoughtless not to exploit the richness inherent in panel data. Therefore, this study will use two waves of PSID data (2003 and 2005). These two years feature repeated observations on the same individual for the same variables of interest, and therefore allow consistency. Repeated observations on the same individual may be used to construct before-and-after regression models that control for omitted variables important to the research question, but not captured in the data as they are hard or impossible to measure.

Per Stock and Watson (2007), before-and-after estimations compare values for variables in the second period (2005) to variables of the first period (2003), or $x_{i2005} - x_{i2003}$. In other words, the change in variables is included in specification. Continuously measured variables

are simply subtracted. Dummy, or binary, variables are compared as well. For example, the dummy marriage variable equals one if respondent is married, and zero if respondent is not. When 2005 dummy values are compared to 2003 values, one of three values may occur: negative one, zero, or one (-1, 0, 1). Before-and-after comparisons prohibit the inclusion of time-constant variables, such as race and gender, by themselves (Stock & Watson, 2007). Equation 4 demonstrates a generic before-and-after specification.

$$y_{it+1} - y_{it} = \beta_0 + \beta_1(x_{it+1} - x_{it}) + u_{it+1} - u_{it}$$

Equation 4. Generic before-and-after specification.

Before-and-after comparisons: assumptions

In order to obtain more credible results, certain assumptions must be addressed while using panel data with before-and-after comparisons, per Wooldridge (2006) and Stock and Watson (2007). It is assumed that the value of the error term ($u_{i2005} - u_{i2003}$) given independent variables is zero. Known as zero conditional mean, this assumption implies that there is no omitted variable bias. This study takes measures to prevent omitted variable bias by using theory and empirical literature in developing models. Second, it is assumed that variables for one individual are distributed identically to and independently (i.i.d.) of the variables for another entity. This assumption holds if simple random sampling is used to select observations. As stated by the University of Michigan (2009), PSID is not based on a simple random sample. It is suggested that variables ER31996 and ER31997 be used for computing sampling errors (University of Michigan, 2009b). Third, it is assumed that large outliers, which have the ability to produce deceptive results, are unlikely. Mendenhall and Sincich (2003) suggest using the statistical measure, Cook's Distance (D_i), to determine the overall influence that outliers may have on estimated coefficients. This study eliminates outliers based on Cook's Distance (D_i), as suggested by Stock and Watson (2007).

Fourth, it is assumed that there is no perfect multicollinearity among independent variables. Multicollinearity occurs when moderate to high correlation occurs between two or more independent variables (Mendenhall & Sincich, 2003). Perfect multicollinearity occurs when categorical variables are used without reference categories; this is referred to as the dummy trap. To avoid this dummy trap, appropriate variables are omitted from models as reference categories. Additionally, per Mendenhall and Sincich (2003), any variance inflation factor (VIF) value greater than 10 indicates severe multicollinearity. Per Ott and Longnecker (2001), VIF values equalling one indicate no collinearity. Multicollinearity presents no issue with any of the models as all values obtained are close to one; no value is greater than two.

Wooldridge (2006) states that homoskedasticity is the final assumption. Per Stock and Watson (2007), homoskedasticity refers to constant variance of the error term given independent variables. The term heteroskedastic refers to error terms that are not constant. Heteroskedasticity leads to inaccurate confidence intervals for parameters ($\beta_1 \dots \beta_k$). Stock and Watson (2007) observe that heteroskedasticity is very common, and economic theory does not give any reason to trust that errors are homoskedastic. This study uses techniques that are robust to heteroskedasticity, namely Taylor series linearisation (SAS Technical Support, 2009). Here, the Taylor series linearisation method addresses

complex sampling by computing sampling errors with stratum and cluster variables ER31996 and ER31997.

Results

This study features two main models: one with religious voluntarism and another with political voluntarism as continuous dependent variables. Each model features five subsamples. Models for male and female head subsamples are almost identical; the difference is that the model for male heads controls for marriage. However, the models do not capture the same type of head. For example, male heads can be married or unmarried. Models that do not control for variables that may influence voluntarism among married men, such as factors related to the wife, may be omitting important variables. In contrast, by definition, female heads are restricted to unmarried women. In order to make subsamples more comparable, male heads were further restricted to those unmarried in 2003 and 2005.

All models feature the same binomial key independent variable, tenure. All multiple regression models use stratum, cluster, and weight variables during analysis. All models yield small coefficients of determination (R^2). Wooldridge cautions against putting too much weight on R^2 , citing that low values do not indicate violation of the zero conditional mean, or omitted variable bias assumption. Instead, low values may indicate that variables that influence the dependent variable are not present in models (Wooldridge, 2006).

Multiple regression: religious voluntarism

Table 1 presents multiple regression results for models using religious voluntarism as the dependent variable. The symbol (---) indicates that variables were excluded due to irrelevance to model or having insufficient variation for estimations.

Table 1 shows no statistically significant key coefficient for any of the five subsamples. Among the remaining variables, seven are statistically significant. Four variables relate to community size. It seems that community size is associated with an increase in religious voluntarism when communities are small, that is, when the population of the largest city is 10,000-24,999 (*size5*) for male heads and family (head) (columns one and four). These results are consistent with Putnam, who observed that volunteer behaviour such as formal volunteering and working on community projects are more prevalent in smaller towns (Putnam, 2000). An increase in religious voluntarism occurs for families (head) when communities are midsized, that is, when the largest city population is 50,000-99,999 (*size3*) (column 4). For families (wife) (column 5), a decrease in religious voluntarism occurs when the largest city in a community has a population between 25,000 and 49,999 (*size4*).

The other three significant variables relate to the wife's education and working status (column 5). Employment appears to have a negative impact on religious voluntarism, as wives that may manage a home, family, and career may have less volunteer time. Unemployment also has a negative impact on religious voluntarism. Perhaps unemployed individuals spend time seeking market work, as opposed to volunteering. An increase in education is positively related to religious voluntarism. Increased education may lead to better employment opportunities, which per Putnam (2000) increases the likelihood of volunteering.

Table 1.

Multiple regression, dependent variable: Religious voluntarism

	Families				
	(1)	(2)	(3)	(4)	(5)
	Male heads	Unmarried male heads	Female heads	Dependent: Head	Dependent: Wife
	Estimate (SE)	Estimate (SE)	Estimate (SE)	Estimate (SE)	Estimate (SE)
Key independent variable					
home_own_change	.083 (.064) t = 1.30	.067 (.078) t = .86	.122 (.097) t = 1.26	.12 (.076) t = 1.58	-.031 (.255) t = -.12
Other independent variables					
income_change	.000 (.000) t = -.72	.000 (.000) t = .76	-.000 (.000) t = -.44	.000 (.000) t = .31	.000 (.000) t = -.19
head_educ_change	.002 (.069) t = .04	-.022 (.029) t = -.76	--- ---	--- ---	--- ---
children_change	.049 (.042) t = 1.18	-.15 (.16) t = -.94	.126 (.166) t = .76	.09 (.059) t = 1.52	-.214 (.208) t = -1.03
moved_change	-.074 (.052) t = -1.43	.023 (.042) t = .55	-.125 (.132) t = -.94	-.068 (.068) t = -1.01	-.614 (.418) t = -1.47
head_employ_change	.079 (.082) t = .96	.419 (.322) t = 1.30	-.053 (.248) t = -.21	-.009 (.075) t = -.12	-1.134 (.98) t = -1.16
head_unemploy_change	.005 (.091) t = .06	.357 (.272) t = 1.31	.145 (.368) t = .39	-.062 (.085) t = -.73	-1.45 (1.042) t = -1.39
size1_change	.152 (.119) t = 1.27	.188 (.133) t = 1.41	.003 (.101) t = .03	.037 (.106) t = .34	-.041 (.293) t = -.14
size2_change	.084 (.104) t = .8	.137 (.12) t = 1.14	-.125 (.109) t = -1.15	-.072 (.104) t = -.7	-.313 (.223) t = -1.40
size3_change	.111 (.1) t = 1.1	--- ---	.029 (.057) t = .51	.196** (.082) t = 2.39	.003 (.385) t = .01
size4_change	.302 (.199) t = 1.51	.186 (.123) t = 1.52	-.016 (.144) t = -.11	.069 (.107) t = .64	-.905* (.518) t = -1.75

Table 1 cont.

Multiple regression, dependent variable: Religious voluntarism

	(1)	(2)	(3)	Families	
				(4)	(5)
	Male heads	Unmarried male heads	Female heads	Dependent: Head	Dependent: Wife
	Estimate (SE)	Estimate (SE)	Estimate (SE)	Estimate (SE)	Estimate (SE)
Other independent variables					
size5_change	.2* (.109) t = 1.83	.202 (.147) t = 1.37	.11 (.131) t = .84	.14* (.08) t = 1.74	-.142 (.334) t = -.42
married_change	.001 (.073) t = .02	---	---	---	---
wife_educ_change	---	---	---	.194* (.113) t = 1.71	.076 (.654) t = .12
wife_employ_change	---	---	---	.001 (.097) t = .01	-1.241* (.664) t = -1.87
wife_unemploy_change	---	---	---	-.084 (.166) t = -.51	-1.273** (.558) t = -2.28
Summary statistics					
N	3684	517	1227	2870	2878
R2	.000717	.00352	.002524	.001128	.009893
Pr >F	.003	.4102	.4204	.0008	.0011

* Significant at $\alpha = .1$; **Significant at $\alpha = .05$

Reference categories:

- Male heads (married and unmarried): head_nonlabor_change; size6_change
- Female heads: head_nonlabor_change; size6_change
- Families: head_nonlabor_change; wife_non_labor_change; size6_change

Multiple regression: political voluntarism

Table 2 presents multiple regression results for models using political voluntarism as the dependent variable. The symbol (---) indicates that the variable is not used in modelling either because it was inappropriate given the model or not enough variation was present for estimations.

Table 2.

Multiple regression, dependent variable: Political voluntarism

	(1)	(2)	(3)	Families	
				(4)	(5)
	Male heads	Unmarried male heads	Female heads	Dependent: Head	Dependent: Wife
	Estimate (SE)	Estimate (SE)	Estimate (SE)	Estimate (SE)	Estimate (SE)
Key independent variable					
home_own_change	.026 (.023) t = 1.13	.073 (.062) t = 1.18	.048 (.042) t = 1.14	.002 (.004) t = .4	.136 (.141) t = .96
Other independent variables					
income_change	-.000 (.000) t = -.70	-.000 (.000) t = -.56	.000 (.000) t = .9	-.000 (.000) t = -.07	-.000 (.000) t = -1.05
head_educ_change	-.001 (.01) t = -.13	.007 (.013) t = .56	---	---	---
children_change	-.015* (.009) t = -1.81	-.006 (.021) t = -.28	-.015 (.021) t = -.69	-.003 (.005) t = -.61	.372 (.327) t = 1.14
moved_change	.007 (.013) t = .57	-.16 (.17) t = -.94	-.03 (.027) t = -1.15	.001 (.009) t = .16	-.026 (.042) t = -.61
head_employ_change	-.012 (.02) t = -.6	-.144 (.086) t = -1.67	-.12 (.081) t = -1.47	.014 (.009) t = 1.51	-.19 (.185) t = -1.03
head_unemploy_change	-.024 (.02) t = -1.32	.021 (.133) t = .16	-.113* (.065) t = -1.73	-.006 (.014) t = -.45	-.478 (.424) t = -1.13
size1_change	-.013 (.01) t = -1.33	-.018 (.107) t = -.17	.028 (.033) t = .87	-.0002 (.004) t = -.06	.115 (.099) t = 1.16
size2_change	-.008* (.01) t = -.88	-.019 (.087) t = -.22	.024 (.038) t = .63	-.0001 (.004) t = -.04	.045 (.044) t = 1.03

Table 2 cont.

Multiple regression, dependent variable: Political voluntarism

	Families				
	(1)	(2)	(3)	(4)	(5)
	Male heads	Unmarried male heads	Female heads	Dependent: Head	Dependent: Wife
	Estimate (SE)	Estimate (SE)	Estimate (SE)	Estimate (SE)	Estimate (SE)
Other independent variables					
size3_change	-.017 (.017) t = 1	.038 (.119) t = .32	.035 (.047) t = .75	.022 (.017) t = 1.25	.097 (.07) t = 1.38
size4_change	-.03 (.018) t = -1.65	-.061 (.099) t = -.62	-.113 (.096) t = -1.17	-.013 (.016) t = -.83	.045 (.088) t = .52
size5_change	-.014 (.017) t = -.88	-.006 (.124) t = -.05	.023 (.019) t = 1.23	.002 (.004) t = .56	.035 (.061) t = .58
married_change	.009 (.01) t = .86	---	---	---	---
wife_educ_change	---	---	---	-.003 (.008) t = -.35	.09 (.207) t = .43
wife_employ_change	---	---	---	.019 (.017) t = 1.13	-.131 (.118) t = -1.11
wife_unemploy_change	---	---	---	.014 (.013) t = 1.09	-.163 (.121) t = -1.35
Summary statistics					
N	3735	528	1252	2926	2924
R2	.000522	.009129	.005446	.000468	.01227
Pr >F	.1991	.7733	.4288	.3762	<.0001

* Significant at $\alpha = .1$; **Significant at $\alpha = .05$

Reference categories:

- Male heads (married and unmarried): head_nonlabor_change; size6_change
- Female heads: head_nonlabor_change; size6_change
- Families: head_nonlabor_change; wife_non_labor_change; size6_change

Table 2 shows no statistically significant key coefficient for any of the five subsamples. There are three other statistically significant variables. For male heads (column 1), living in a

relatively large community is associated with a decrease in political voluntarism. This is somewhat surprising, as larger communities may offer volunteer opportunities. In addition, an additional child in the home is associated with a decrease in political voluntarism. A word of caution is in order; as discussed, this model (column 1) may not hold all else constant. Better models for male subsamples (columns two and four) do not yield significant results. For female heads (column 3), being unemployed is associated with decreased political voluntarism. These women may be too engaged otherwise for political voluntarism.

Analysis of results based on hypotheses

Given the data, variables, and techniques used here, the null hypothesis is not rejected. Homeownership has no evident relationship with citizenship as measured by political and religious voluntarism among individuals. The various subsamples feature some statistically significant variables, mostly related to community size.

It is still reasonable to expect that both homeownership and renting consumers derive happiness from religious and political voluntarism, increase human capital via religious and political voluntarism, and establish and strengthen connections between themselves and others through religious and political voluntarism. It may be that religious and political voluntarism and subsequent utility, human capital, and social capital are driven by factors other than homeownership.

Weaknesses

Limited time span of data

This study uses Panel Study of Income Dynamics (PSID) data from 2003 and 2005 as variables of interest appear in these waves. Little variation in variables leads to imprecise measurements. Having more time periods would allow greater lapse between the first and last periods, and thus increase individual variation necessary for estimation. The 2007 and 2009 waves do not feature voluntarism variables (University of Michigan, 2009a). Future research may use the additional waves to create longer time spans, given inclusion of variables of interest. Alternatively, a different dataset may be used for comparison purposes. The US Census Bureau provides one such panel dataset, the Current Population Survey supplement survey.

Data and variables

The variable that intends to measure connectedness, length of residence, may not be sufficient. The PSID variable asks respondents whether or not they moved since January 1 of prior year. Unfortunately, this does not capture rootedness that might accompany different lengths of tenure. For example, all individuals living in their address since January 1 of the prior year would be recorded as did not move. This does not differentiate whether the individual had lived at address for 2 or 20 years. A rooted person would undoubtedly have more time with which to develop connectedness in the community, and theoretically cultivate religious and political voluntarism. Additionally, it is unknown whether the individual moved down the street, across town, or elsewhere. This may affect connectedness, which in turn may affect religious and political voluntarism.

No causality implied

During analysis, the concern is ever present that some variable important to the research question is not present in data. Wooldridge (2006) observes that the possibility always exists that models do not control enough time-varying factors. Before-and-after comparison is a respected tool for omitting unmeasured or unobserved variables that do not change over time, carefully suspending obstacles (Duncan, 1972). Although using this tool is respected, drawing causal conclusions is still problematic. Stock and Watson (2007) define causality to be the effect of an action or treatment on an outcome, measured via a randomised experiment. Here, the treatment is accepted as the cause of change or lack thereof in the outcome. This study does not use data from a controlled randomised experiment. Primarily for this and other reasons, this study makes no claim to causality.

Final observations

Given this dataset and the techniques used here, the assumption that homeowners are better citizens as a result of increased religious and political voluntarism is unfounded. Results overwhelmingly indicate that tenure does not matter. Given that the tenure norm in the United States is homeownership, renting might be seen as a less attractive option than ownership. Those who rent may be perceived to be somehow lesser than those who own. The implication of this study is that individual community participation as measured by religious and political voluntarism is not stifled by renting.

Biography

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Issue 2, 2011

Publication in IJHE provides wide exposure to journal articles and adds to the professional literature base of our field. Theoretical papers, literature reviews, and a wide range of genres along with research papers are invited for publication in the journal. As editor, I strongly encourage submissions to the journal.

Papers in this journal comprise research and theoretical papers. The research paper written by Gwendolyn Hustvedt and Marsha Dickson provides a unique insight into the attitudes of older consumers towards organic cotton. The findings potentially provide product developers and retailers with insights about meeting the needs of older consumers interested in green purchases. Also in the consumer education field, Vuokka Jarva takes the reader to the world of consumer policy, with a thematic analysis of European strategy documents. Sue McGregor continues to open the theoretical lenses by which we view the world, providing theoretical insights into the quantum holomovement principle and the connections with the home economics profession. The final article is also contributed by Sue McGregor, who explores transdisciplinary methodology for the field.

As always, the articles have undergone rigorous, double-blind review, and are adding to the professional literature base of the field.

Please do not forget the IFHE XXII World Congress focusing on Global Wellbeing in Melbourne, Australia 16-21 July 2012. For more information, visit <http://www.ifhe2012.org/>

Donna Pendergast, PhD
Editor, IJHE

Sustainable fashion and the older consumer: Attitudes towards organic cotton

Gwendolyn Hustvedt, Marsha A. Dickson

Texas State University, University of Delaware

Abstract

The purpose of this study is to improve understanding of organic apparel consumption by focusing on the older consumer. Data were collected with a mail survey of US health and natural foods consumers. Analysis of variance found that older consumers did not have significantly different levels of green self-identity, skepticism towards environmental purchase claims or intention to search for or purchase organic cotton apparel when compared with younger consumers. Further analysis of attitudes toward organic apparel purchases finds that support of organic farming and pro-environmental companies is significantly more important to consumers over 65 than to younger (under 45) consumers. Older consumers also value paying more for organic apparel more than younger consumers even though they report significantly more difficulty in finding organic cotton products. However, the outcome of receiving health benefits or peace of mind from an organic apparel purchase was not more significantly important to any specific age group. The results of this study suggest that older US consumers are an important market for sustainable fashion products but that marketing to older consumers should focus on the broader societal benefits of organic cotton purchases rather than personal benefits.

Key words: Organic, Elderly Consumers, Apparel, Sustainability

Introduction

An important focus point for individuals in developed countries interested in increasing global sustainability has been their role as “green” consumers. Green consumerism is seen by many as one way to use market forces to reduce the environmental impact of global consumption. A significant and successful part of the “green” market has been the market for organically grown agricultural products.

What motivates the organic consumer? The reasons may be varied. Despite the environmental benefits related to organic agriculture, a vast majority (93%) of organic food consumers surveyed are motivated by “health reasons” (i.e. pesticide poisoning) while a minority (30%) cite environmental concern as a reason for organic food purchase (Hutchins & Greenhalgh, 1997). However, another survey of organic food consumers revealed that many have concerns about farming production processes that are broader than pesticide use (Conner, 2004). Many respondents stated they were opposed to corporate-based food production and were interested in supporting “sustainable” agriculture. With demographic shifts and the concentration of wealth, the mature consumer (45+) in more developed regions (i.e., US/Canada and the EU) have enormous power in the market place, including the market for organic products. Understanding the attitudes of the mature consumer toward organic

farming and organic products is therefore an important part of continuing to build the market for organic products.

The market for organic apparel products in the US has grown by fits and starts. Prior to the release of the United States Department of Agriculture (USDA) standard for organic certification in the early 2000s, several brands tried organic cotton product lines with varying and limited success (Imhoff, 1995). Along with the dynamic growth of the organic food industry, the market for organic apparel products has also grown steadily. According to the Organic Trade Association (OTA), a group of US organic producers, manufacturers and retailers, in 2009 organic fibre sales (mainly organic cotton) in the United States reached \$521 million, a growth of 10% over the previous year (OTA, 2011). Organic cotton products are now available at a wide variety of retailers in the US, from Nike to Wal-Mart.

Organic Consumers

Previous research has extensively examined the demographics and motivations of organic food consumer and found that, other than possessing higher levels of education, they are presently not much different from the general population in terms of their demographics (Dimitri & Oberholtzer, 2009). An early meta-analysis of 128 studies of environmental behaviour found no significant relationship between any of the socio-demographics variables and environmental behaviour (Hines, Hungerford, & Tomera, 1987). According to Allen and Kovach (2000), organic food purchasing and consumption is “a paradigmatic case of green consumerism” (p. 222). Looking at a more recent meta-analysis of research on “green” consumers we see that that because environmental concern, and “green” consumption (such as organic food consumption), has become commonplace in Western cultures, socio-demographics may predict levels of environmental knowledge or attitudes, but they do not predict actual “green” behaviour for developed-world consumers (Diamantopoulos, Schlegelmilch, Sinkovics, & Bohlen, 2002). To many, this suggests that efforts to increase sustainable consumer behaviour do not need to take demographic differences into consideration. However, this previous research did not examine the consumption of organic fashion, and fashion consumption may be influenced by demographics, especially age.

Older Fashion Consumers

Fashion is not food (or recycling cans) and the development and marketing of fashion products is significantly different than food product development and marketing. Researchers in food product development bemoan that “eating preferences and habits’ slow rate of change, together with the consequent consumer aversion to too much novelty in food, constitute a barrier” to constantly introducing new food products (Costa & Jongen, 2006). Fashion products are also tied to the expression of self-identity (Stone, 1962) and even where groups of fashion consumers may purchase almost identical products, an understanding of their needs and motivations is important to develop and market the products successfully. The mature fashion consumer has been studied over the years, as each generational cohort ages, in order to understand the needs of this powerful consumer group. A meta-study of consumers over 65 found that older US apparel consumers are less price sensitive and more fashion conscious than other adult fashion consumers, while spending the same amount (Tongren, 2005). Fashion is important to older women for a variety of reasons; one study

found that fashion involvement increased self-esteem by boosting social participation (Joung & Miller, 2006). Differences between fashion consumers are not limited to spending power and the purpose of shopping. Older consumers are often shopping for different products. For example, a comparison of younger (under 25) and older (over 65) fashion consumers found that the pantsuit is more fashionable to older consumers (Nam et al., 2007). Older consumers are also looking for products with different attributes than those important to younger consumers. The desire for high quality, comfort and good fit was an important difference between baby boomer (40-59) and older (60+) consumers, on the one hand, and younger consumers (under 40), on the other hand, in a study of consumers of fair trade apparel (Littrell, Ma, & Halepete, 2005). A qualitative study of 20 American women over 65 confirmed previous research that found older fashion consumers desire more than high-quality products that fit well, they also desire product that are fashionable (Thomas & Peters, 2009). This study adds however that all these attributes are important to older consumers because, just like younger consumers, their self-identity is strongly connected to fashion (Thomas & Peters, 2009).

As explained in the literature review of a recent dissertation on the “invisible mature female consumer,” there is a substantial gap in the apparel research literature on the fashion needs of older consumers. Mohylsky (2011) conducted a qualitative study with 22 American women over 50 and found that among the concerns these women had about the apparel being marketed to them were that the industry saw them as “matronly, motherly, and frumpy” (p. 94), that it was hard to find clothing that flattered their body but that wasn’t “too old looking” (p. 94) and that the choices available to them were not the “beautiful apparel that was well constructed and made from unique and quality fabric” that they desired to purchase (Mohylsky, 2011, p. 95). The participants in this study expressed confusion about who was buying the clothing being marketed to the mature female consumer, since they were looking for flattering stylish clothes and what was on offer in stores marketing to them was more likely to be a “watered down” version of the style trends (Mohylsky, 2011, p. 99). The concern expressed by the women in this study, that the industry had a preconceived image of how older consumers should look, aligns with the results of a study of fashion merchandising students and their opinion of the appropriate colours for older women (Hedge & Hustvedt, 2011). This study found that students rated the same colours as appropriate for the older woman target market that they had previously selected as “passive,” “inconspicuous” and “delicate” and that these were the same colours (low-saturation neutrals) that pose a perception difficulty for the eye as it ages.

Perhaps because the body of research on the older apparel consumer is small, it does not yet include much exploration of the older organic apparel consumer. A survey of San Francisco consumers found that while organic food consumers tended to be younger, age did not predict willingness to pay for organic apparel products (Wang, 2007). Lin (2009) conducted an intercept survey of 420 Hawaiians, 14% of whom were over the age of 45, to explore the market for organic cotton products in Hawaii. The study found a relationship between the preference for organic food products and organic cotton products and that consumers who preferred organic cotton were more concerned about the environment than those who preferred conventional cotton products. Like Wang (2007), he also found that the preference of Hawaiian consumers for organic cotton over conventional cotton was unrelated to age (Lin,

2009). Neither of these studies included details on differences in attitudes toward organic apparel purchases or organic product attributes based on age group and both studies included relatively few consumers over 65.

Previous research has found that consumers who find organic cotton content salient are motivated by their beliefs about the beneficial outcomes of the purchase, including the outcome of “improving my health or the health of my family” (Hustvedt & Dickson, 2009). Consumers in the segment that used organic cotton content to form their purchase intentions had positive attitudes toward organic and sustainable agriculture and were more concerned about the impact of clothing production on the environment than other consumers. They also preferred to “buy locally” and had a strong self-identity as environmental, organic, and socially responsible consumers (Hustvedt & Dickson, 2009).

The needs of the older fashion consumer have not been adequately explored but they do represent a segment of all markets that is growing in significance. According to the US National Institute on Aging (NIA), the increased lifespan of consumers in almost all countries around the world, with the exception of some parts of Latin America and Africa, means that between 2005 and 2030 there will be a 104% increase in the number of people over the age of 65 (NIA, 2007). In developing countries this increase will be even more rapid as the number of people over 65 will increase by 140% by 2030 (NIA, 2007). The market segment represented by consumers over 65 poses a striking level of wealth in developed countries such as the US. For example, Americans over 65 have an average net worth of more than \$130,00 and together with consumers over 55 they comprise a segment that represents 40% of consumer demand in the US (Branchik, 2010).

The purpose of this study was to explore the attitudes of older American consumers toward organic cotton. If organic fashion products are to gain the same level of market acceptance as organic food products, they must appeal to consumers of all ages. Given the buying power of this growing demographic segment, the older apparel consumer should not be left out of consideration. However, because older fashion consumers have been shown to have age-specific fashion concerns, understanding the goals and attitudes of the older consumer toward their organic apparel purchases is important in the sustainable fashion product development process.

Method

The survey was mailed to 2,905 health and natural food consumers, randomly selected from a national mailing list database firm. This sample was chosen because of the potential connection between interest in health and natural food consumption and organic apparel consumption, given that both are types of “green” consumer behaviour. The sample of adults (18 years or older) was stratified by state population to ensure full national representation. The design and mailing of the 12-page booklet followed the recommendations of Dillman in terms of format and follow up contact (Dillman, 2000).

The first portion of the questionnaire contained a conjoint task designed to elicit consumer evaluations of apparel product attributes relevant to the purchase of organic cotton apparel. Conjoint and cluster analysis were used to create two market segments based on the use of

the organic cotton content attribute. The second section of the survey contained a variety of measures for psychological variables related to sustainability (environmental, organic or socially responsible consumer behaviour, skepticism) as well as behavioural intentions. The analysis of these first two sections is outlined in a previous publication (Hustvedt & Dickson, 2009).

The survey also included 22 items measuring behavioural beliefs and outcome evaluations related to the behavioural beliefs. The behavioural beliefs, covering a wide range of issues related to ethical/environmental consumerism, were measured by asking respondents to rate their agreement (on a 7-point Likert scale) that selected outcomes would result from their purchase of an organic cotton apparel product. The outcome evaluations were measured by asking respondents to rate the importance (1 = very unimportant to 7 = very important) "How important is each of the following to you?" for each of the outcomes suggested in the behavioural beliefs. The final section of the questionnaire included demographic items such as age, gender, household income, education level and number of children at home.

The instrument was shared with industry professionals to determine face validity for any items that had been developed or adapted for this particular study, including the behavioural beliefs and outcomes associated with organic cotton apparel purchases. After receiving approval from the Institutional Review Board for Human Subjects, the instrument was also pre-tested with groups of university students to determine the reliability of the measures included in the instrument and to fine tune the instrument for ease of use by the survey respondents.

Results

The number of returned questionnaires that were at least partially complete was 422 out of 2846 questionnaires that were delivered (response rate of 14.9%). Of the 422 questionnaires, 377 (89.3%) were used to create the organic cotton user segments and were also used for the analysis presented here. This response rate was not as high as those suggested as possible (30%) by Dillman in his book on survey administration (Dillman, 2000). At the very least, the poor response rate may be due to the timing of the survey, as the holiday season would not be a convenient time for respondents to complete a lengthy survey.

Nonresponse and Incomplete Questionnaires

Analysis was conducted to determine if any implications about non-respondents could be gleaned from the survey. Of the returned surveys 136 (5%) were completely blank or blank except for comments. Participants were instructed to return blank surveys to indicate confidentially that they were not interested in participating in the survey and should be removed from the mailing list. Comments included on the blank surveys mainly suggested that the respondents were not interested in the subject of organic cotton or did not feel themselves qualified to participate for some reason.

As suggested by Dillman (2000), an analysis was conducted to compare the first and second wave of respondents in terms of several socio-demographic and psychographic variables in order to better understand the non-respondents. Analysis of Variance (ANOVA) confirmed the

first wave of respondents were significantly more educated than the second wave. This suggests that the topic or format of the survey may have been slightly more appealing to respondents with more education. Chi-square analysis of gender between the two waves suggests that the non-respondents were significantly more male than the respondents. This was not surprising considering the topic of the study was apparel, thus the men who received the study were probably less interested in the topic.

U.S. Health and Natural Foods Consumer Profile

The demographics of survey respondents are summarized in Table 1. Although the random sample purchased included any health and natural foods consumers over the age of 18, the age of the study participants ranged from 25 to 90. When broken down into categories, the majority of respondents fell in the 45 to 64-year age category and the number of respondents over the age of 65 was larger than those under the age of 45.

A comparison of the demographics of the survey respondents with the demographics of the US population shows respondents were somewhat older ($M= 57$ years) than the general population. Approximately 49% of Americans 18 and older were 45 years old and older (U.S. Census Bureau, 2004). When broken down into categories the largest age group in the general population was under 24, with 24 to 44 being the next largest.

The gender of respondents was fairly evenly divided between male (47.9%) and female (49.8%) with 2.4% of respondents declining to specify gender. The percentage of female respondents was similar to the US average of 51.1% in 2004. A majority (77.0%) of respondents did not have children under the age of 18 living in their home. This was somewhat higher than the general population (64.8%) but may be explained by the greater number of older respondents, likely past the age at which they have children living at home.

More than half of respondents did not report having completed a baccalaureate degree. Less than one percent reported not completing high school, while 19% reported high school as their highest level of education completed. Of the approximately 43% of respondents who completed a college degree, 59% had been engaged in graduate education at some point, with 17% of overall respondents reporting a completed graduate degree. The level of education reported by respondents was higher than the national average. Only 27 percent of the general population have completed a bachelor's degree or higher, compared to 43 percent of the sample. Conversely, fewer people in the sample reported a high school diploma as their highest degree (19.2%) compared to 29.5 percent of the general population. Respondents reported receiving a graduate degree at a rate (17.2%) nearly twice the national average (9.9%).

Fourteen percent of respondents declined to answer the questions about income. Of the 361 respondents who answered the question, 35% reported a total before tax household income of \$49,000 or less and 17% reported a total before tax household income of \$100,000 and over. Only 7 respondents (1.9% of all respondents) reported an annual household income of less than \$25,000 in 2004. The largest single income category was those respondents reporting a 2004 annual household income of \$25,000-\$49,000. Far fewer of the respondents in the study reported an income lower than \$50,000 (34.9%) than in the general population (55%). The

percentage of respondents reporting incomes over \$100,000 (16.6%) was very similar to the national average (15%). If the respondents who did not report income are excluded, the percentage of respondents reporting an annual pre-tax income above \$50,000 was around 14% higher than the national average (45.1%).

Table 1 Overall demographic characteristics

Characteristic	<i>f</i>	% frequency	US General Population ^a
Age	405	94.9	
24 and under	0	0.0	34.8
25 to 44	71	16.8	28.8
45 to 64	220	52.1	24.5
65 and over	114	27.0	12.0
Gender	412	97.6	
Male	202	47.9	48.9
Female	210	49.8	51.1
Education	411	96.5	
Less than 9 th grade	3	0.7	6.3
Completed high school (grades 9 through 12)	81	19.2	39.3
1-3 years technical, vocational, or college	145	34.4	27.4
Bachelor's degree	74	17.5	17.2
Some graduate work	35	8.3	-
Completed graduate degree	73	17.3	9.9
Percent high school graduate or higher	408	96.7	83.9
Percent bachelor's degree or higher	182	43.1	27.0
Children under the age of 18	412	97.6	
No	325	77.0	64.8
Yes	87	20.6	35.2
Income	361	85.5	
Less than \$10,000	7	1.7	8.9
\$10,000 to \$24,999	40	9.5	18.6
\$25,000 to \$49,999	100	23.7	27.5
\$50,000 to \$74,999	89	21.1	19.0
\$75,000 to \$99,000	55	13.0	11.1
\$100,000 and over	70	16.6	15.0

^a From US Census Bureau, 2004

Finally, because the sample was stratified by state population, the geographic distribution of the respondents was also examined. The numbers of responses from each geographic region were compared to the number of responses that would be expected based on the number of surveys sent to the region. Fewer responses than expected were received from the northeast (-3.91%) and the South (-1.79%), while more responses than expected came from the Northwest (2.27%) including Alaska, and the Southwest (2.40%) including Hawaii.

Organic Cotton Apparel Market Segments

The survey included a conjoint task designed to measure the salience of various credence attributes (percentage of organic cotton, eco-friendly processing claims, and social responsibility labelling) on consumer likelihood of purchasing organic cotton apparel products. Based on the results of this conjoint task, participants were grouped using cluster analysis into two groups: purchasers who found organic content salient and purchasers who did not (Hustvedt & Dickson, 2009). While this previous study found that these segments of organic cotton users were significantly different in terms of their attitudes, an ANOVA here found that there was no significant difference, in terms of demographic characteristics, between participants who found organic content important for their purchase decision and those who did not consider organic content when choosing a product in the conjoint task (see Table 2).

Table 2 One-way analysis of variance for effects of cluster membership on demographic variables

Variable and Source	Df	SS	MS	F	Sig.
Age					
Between groups	1	290.73	290.73	1.58	n.s.
Within groups	359	66006.03	183.86		
Education					
Between groups	1	5.52	5.52	2.97	n.s.
Within groups	363	673.98	1.86		
Children in the home					
Between groups	1	0.01	0.01	0.03	n.s.
Within groups	364	61.37	0.17		
Income					
Between groups	1	1.59	1.59	0.88	n.s.
Within groups	321	576.21	1.80		

n.s. means not significant

Age Differences in Psychographics and Behavioural Intention

An ANOVA, conducted using a number of psychographic variables, found that the general attitudes or behavioural intentions of older health and natural foods consumers do not differ significantly from those who are younger based on these six variables (see Table 3). (A discussion of the development of the first five variables can be found in Hustvedt & Dickson, 2009.)

The first variable, Environmental Attitudes, measures agreement that organic agriculture is good for the environment and that sustainable agriculture is important. A second variable, Clothing Attitudes, measures agreement that respondents would buy organic or fair trade clothing with the aim of supporting organic farming. Sustainable Self-Identity is a measure of respondents' self-identification as socially responsible, organic or environmental consumers. Participants were asked about the likelihood that they would purchase organic clothing the next time they went shopping for apparel. This variable was called Search Intention to capture the idea that finding organic apparel to complete this intention might require a search. The Purchase Intention measured the participant's likelihood of purchasing organic clothing if they happened to find it the next time they went shopping for apparel.

Table 3 One-way analysis of variance for effects of age groups on psychographic and behavioural intention variables

Variable and Source	Df	SS	MS	F	Sig.
<i>Environmental Attitudes</i>					
Between groups	2	0.21	0.11	0.15	n.s
Within groups	354	245.82	0.69		n.s
<i>Clothing Attitudes</i>					
Between groups	2	2.66	1.33	0.81	n.s
Within groups	355	580.32	1.64		n.s
<i>Sustainable Self-Identity</i>					
Between groups	2	2.01	1.00	0.95	n.s
Within groups	357	303.43	0.85		n.s
<i>Search Intention</i>					
Between groups	2	4.41	2.204	1.019	n.s
Within groups	356	770.08	2.163		n.s
<i>Purchase Intention</i>					
Between groups	2	1.80	0.901	0.56	n.s
Within groups	356	578.39	1.625		n.s
<i>Scepticism</i>					
Between groups	2	0.98	0.49	0.80	n.s
Within groups	355	217.11	0.61		n.s

n.s. means not significant

Scepticism of Environmental Product Claims

The psychographics of the sample also included a 5-item measure of scepticism based on the work of Mohr, Eroglu, and Ellen (1998) who developed and tested a measure of consumer scepticism toward environmental claims in marketing communications.

Their measure included four items measured on 7-point Likert-type scale with good reliability ($\alpha = .79$). One item in their scale, "Because environmental claims are exaggerated, consumers would be better off if such claims on package labels or in advertising were eliminated" was considered double barreled. For this reason, it was split into two items; "Environmental claims on product labels or advertising are exaggerated" and "Consumers would be better off if environmental claims on product labels or in advertising were eliminated." Their items were modified by changing "package labels" to a more general "product labels."

During principal components analysis of the measure of scepticism, all five of the items loaded onto a single factor with a factor loading over .5 (see Table 4). Reliability analysis suggested that the five items reliably measure a single underlying concept based on the Cronbach's alpha of .72. The mean for the resulting variable was 3.83 (SD= .78) on a 7-point Likert scale, indicating that, on average, respondents neither agreed nor disagreed with statements about the credibility of environmental product claims. An ANOVA also showed that the means for Scepticism did not differ significantly between the age groups (see Table 3).

Table 4 Principal components analysis of scepticism

Variable	Item	Factor Loading
<i>Scepticism</i> (Cronbach's alpha = .72 variance explained = 49% Eigenvalue = 2.45)	I do not believe most environmental claims made on product labels or in advertising	0.84
	Most environmental claims on product labels or in advertising are intended to mislead rather than inform consumers	0.82
	Environmental claims made on product labels or in advertising are exaggerated	0.64
	Most environmental claims made on product labels or in advertising are true ^a	0.62
	Consumers would be better off if environmental claims on product labels or in advertising were eliminated	0.54

^a reverse coded

Age Differences in Attitudes Toward Organic Cotton

An ANOVA was also conducted using all 22 of the behavioural beliefs and outcome evaluations to determine if the attitudes of older health and natural foods consumers differ from those who are younger. A number of the behavioural beliefs and outcome evaluations of consumers in the oldest age category were significantly stronger than those of younger consumers (see Table 5).

Table 5 One-way analysis of variance for effects of age groups on behavioural beliefs and importance of outcome

Items	Behavioural Beliefs				Importance of Outcome			
	Df	SS	MS	F	Df	SS	MS	F
<i>Fair price for producers</i>								
Between groups	2	18.25	9.13	4.37*	2	6.6	3.30	2.06
Within groups	339	707.46	2.09		346	554.64	1.60	
<i>More retailers</i>								
Between groups	2	1.33	0.67	.049	2	7.08	3.54	2.27
Within groups	337	457.42	1.36		342	532.37	1.56	
<i>Expensive product</i>								
Between groups	2	14.59	1.29	3.47*	2	19.28	9.64	3.72*
Within groups	337	708.18	2.10		341	883.65	2.59	
<i>Reduction in pesticides</i>								
Between groups	2	6.61	3.03	1.73	2	2.30	1.15	0.81
Within groups	336	641.06	1.19		347	494.32	1.43	
<i>Peace of mind</i>								
Between groups	2	6.74	3.37	1.42	2	4.46	2.23	1.03
Within groups	338	802.84	2.38		343	741.45	2.16	
<i>Health of family</i>								
Between groups	2	15.43	7.72	3.44*	2	1.85	0.92	0.76
Within groups	338	758.46	2.24		245	419.84	1.22	
<i>Product availability</i>								
Between groups	2	21.68	10.84	5.66**	2	32.42	16.21	7.97***
Within groups	331	633.77	1.92		335	681.69	2.04	
<i>Supporting producers</i>								
Between groups	2	4.74	2.37	1.56	2	13.26	6.63	3.85*
Within groups	334	508.88	1.52		345	594.00	1.72	
<i>Supporting pro-environmental companies</i>								
Between groups	2	13.61	6.81	4.12*	2	13.29	6.65	6.06*
Within groups	335	553.59	1.65		343	475.05	2.17	
<i>Supporting organic farming</i>								
Between groups	2	10.72	5.36	4.13*	2	13.18	6.59	4.37
Within groups	337	437.46	1.30		346	522.25	1.51	
<i>Quality product</i>								
Between groups	2	2.72	1.36	0.88	2	0.19	0.10	0.12
Within groups	336	517.69	1.54		346	284.49	0.82	

* p<.05 ** p<.01 *** p<.001

Post-hoc analysis (Tukey's) was conducted to determine if the differences between age groups were significant under more stringent tests (see Table 6).

Table 6 Mean scores on organic purchase outcomes as a function of age group

	Age Groups								
	25-44			45-64			65 and over		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
<i>Behavioural Beliefs</i>									
Fair price for organic cotton producers	61	4.97 _a	1.44	193	4.91 _a	1.53	89	5.45 _b	1.23
Purchasing a product which is not readily available	60	4.07 _a	1.40	188	4.50 _{ab}	1.37	86	4.85 _b	1.41
Supporting pro-environmental companies	61	5.40 _a	1.44	192	5.30 _a	1.35	85	5.78 _b	0.99
Supporting organic farming	61	5.69 _{ab}	1.26	192	5.61 _a	1.20	87	6.03 _b	0.88
<i>Importance of Outcome</i>									
Purchasing a product which is more expensive	61	3.79 _a	1.98	196	4.37 _b	1.58	87	4.46 _b	1.39
Supporting organic cotton producers	63	4.98 _a	1.69	196	5.26 _{ab}	1.33	89	5.57 _b	1.21
Supporting pro-environmental companies	63	5.02 _a	1.05	194	5.25 _{ab}	1.40	89	5.60 _b	1.46
Supporting organic farming	63	5.46 _a	1.02	196	5.50 _{ab}	1.31	90	5.93 _b	1.17

Note: Means in a row sharing subscripts are not significantly different at the .05 level based on Tukey's post hoc test.

Discussion and Conclusions

This study suggests that while older health and natural foods consumers in the US are not dissimilar to younger consumers in many aspects, there are also some differences based on age, and both the similarities and differences are important to discuss. The results of the analysis of the demographic data show that the respondents in the study were older, more highly educated and better off financially than the typical American consumer. This agrees with previous research that suggests that the population of consumers interested in health and natural food is more highly educated than other consumers (Dimitri & Oberholtzer, 2009). Analysis of the geographic distribution of returned surveys (based a geographically representative mailing list) suggest that interest in health and natural foods may be more prevalent in the western half of the United States.

Other studies have found that the US organic food consumer is no longer much different from the general population in terms of their demographics (Dimitri & Oberholtzer, 2009). The ANOVA of segments by demographics confirms the previous research that suggests that the purchase of organic products, including organic apparel, does not depend on variables like age or education and may be only weakly related to income. The lack of differences in the intention to search for or purchase organic apparel between the age groups dismisses any

preconception that the interest of the elderly consumer in sustainable fashion is any different than that of the younger consumer. Older consumers are not less likely than younger consumers to be concerned about the environmental impact of their apparel purchase or to consider themselves sustainable consumers. They are equally likely to be supportive of organic agriculture and organic cotton producers. A very important outcome of this study is to reinforce the idea that sustainable fashion is not just for the young.

However, while different segments of consumers may possess similar general attitudes or engage in similar behaviour, they may be consuming to meet different needs (physical or psychological). Previous research has found that consumers who find organic cotton content salient are motivated by their beliefs about the beneficial outcomes of the purchase, including the outcome of “improving my health or the health of my family” (Hustvedt & Dickson, 2009). The analysis conducted here suggests that elderly consumers (65 and over) are not more likely than those younger to believe that the purchase of organic cotton leads to health benefits. The elderly health and natural foods consumers are more likely to believe that purchasing organic cotton products results in a fair price for organic cotton producers, which may reflect a trust in ability of the supply chain to deliver price premiums to producers. The neutrality of scepticism toward environmental product claims for the overall sample also contributes to the idea that trust/scepticism is currently not an important issue in the marketing of organic apparel products.

Based on the significantly higher behavioural belief that organic apparel is not readily available, the elderly consumer may be having more difficulty than the young consumer (under 44) in finding organic cotton apparel products. Fashion products are more often targeted at younger consumers while, as previous research on the mature female apparel consumer suggests, older (45-64) and elderly consumers are marketed “watered down” versions of trends in the fashion cycle (Mohylsky, 2011). It may be that sustainable fashion is considered by retailers to be “too fashionable” to be suitable for the older consumer and for this reason, the producers of apparel marketed to mature apparel consumers have been slow to adopt organics for their products.

The significantly higher importance to the older and elderly consumer of the outcome of purchasing expensive products is possibly due to quality connotations of price. The interest of the older and elderly consumers in this study in purchasing higher priced products agrees with Mohylsky’s (2011) study of mature female consumers, which found that these consumers desire garment details such as quality fabrics and good construction. The perceived lack of availability of organic products and interest in purchasing expensive products means retailers are missing a good opportunity to target a potentially lucrative segment of consumers. For example, would higher priced, higher quality organic cotton products styled with the shapes, cuts and silhouettes that are more appealing to the elderly consumer be more profitable than the lower quality products (such as t-shirts) more typically produced with organic fibres?

Previous research has also found that supporting organic farming in general was more important to consumers than supporting organic cotton farmers in particular or supporting pro-environmental apparel companies or retailers of organic products. The analysis here finds that while this more general support is true of younger consumers, these elderly consumers

feel it is important to support organic cotton production and pro-environmental companies, not just organic farming. However, the elderly consumers are significantly more likely to believe that purchasing an organic cotton product results in support for pro-environmental companies. This, like their belief that the purchase results in fair prices for farmers, may indicate a level of optimism about the impact of their purchase on the supply chain.

The main contribution of this study, along with the creation of a demographic profile of American health and natural foods consumers, is an exploration of the attitudes toward organic cotton among consumers over 45. Most surprising is the indication that health benefits are not the distinguishing purchase outcome of importance to the older consumers included in this sample. Rather, supporting organic cotton production, pro-environmental companies and organic farming in general were outcomes of organic apparel purchases that were more important to the elderly consumer than to the younger consumer in this examination of US health and natural foods consumers.

There are naturally limitations in the application of this research. Firstly, the low response rate of the mail survey means that there is much that cannot be assumed about the attitudes of the health and natural foods consumers from which the sample was drawn. As the non-response bias analysis suggested, those who participated in the study were more likely to be females or those with higher levels of education, which suggests that the participants were either more interested in apparel shopping, more interested in organic agriculture and/or had more leisure time to complete a survey. This potential bias must be considered when applying the results of this study. Finally, because the sample was limited to consumers in the U.S., there will naturally be limitations when applying the results of this research to consumers in other markets. Research would need to be conducted to determine if older consumers in markets like the EU, which have, for example, well developed eco-labelling for fashion not available in the US, have different motivations for purchasing organic apparel. Additionally, research on organic apparel should be expanded to include consumers in developing countries, given that they are the source of much of the world's organic cotton supply.

Despite these limitations, this study demonstrates the importance of examining a marketing issue like organic products or fashion consumption with a home economics approach. Research that considers the needs and motivations of underrepresented groups of consumers, like older fashion consumers, from an interdisciplinary perspective is the hallmark of a discipline focused on improving quality of life for everyone, regardless of their apparent value to the supply chain. The results of this study provide guidance for product developers and retailers seeking to meet the "green" purchasing needs of older consumers.

Biography

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Abstract

This paper provides insights into the current situation of consumer education, with a focus on the thematic analysis of European strategy documents. The challenging context for consumers, along with consumer education in the 21st Century, are considered. Finally, futures education and consumer education strategies are explored through this analysis of selected relevant documents.

Introduction

Change in the consumption environment has accelerated during the past two decades. The main part of this change has been the improvement and increase of consumption options and thus freedom of choice. Simultaneously, the gap between the rich and the poor has deepened, even within affluent societies. In addition, this affluence and what some regard as the reckless exploitation of the natural resources has endangered the human species and even all living beings. So today the consumption environment is deeply contradictory in both the real external world and the minds of ordinary consumers as conscious people. However the necessary change in consumption modes cannot be reached without strongly futures-oriented consumer education with an emphasis on consumption ethics. Consciousness of the focal role of ordinary consumers, especially in highly industrialized or quickly industrializing countries, has not yet reached critical mass among educators and educational policies.

Globalization means in the economy the intertwining of the world economy into one single system with tight internal dependency. As households have become more dependent on the world economy, they are increasingly threatened by unfavourable changes, even in faraway locations. The walls of home have become permeable and the household more vulnerable. The consumption of youngsters and children is influenced by many factors outside the family, such as peer groups, media, brands, fashion and the fan-culture. Children learn very early to use the newest technology - often earlier than the adults of the family - and they do not have the capability to understand all the risks associated with it. New media like wireless phones and the Internet enable instant and secret economic activities. The economic consequences of a bargain may be revealed to the ratepayer only when the bill arrives. Commercial influence has new modes, often difficult to trace (Barber, 2007).

The development in wealthy societies has been away from production to bought commodities and services. This has given many households an opportunity to increase consumption from scarce to modest and even affluent. This means an increase in the freedom of choice and the transfer of emphasis of consumption from necessities to fulfilment of desires. Instead of sparing, households take on debt, and even become excessively indebted. At the same time, the old, class-based consumption models have degraded into myriads of small group and

individual styles. The emphasis has moved from long-range satisfaction to instant gratification.

A counterweight to these trends is the movement of sustainable consumption in which long-range consequences and ecological, economic and socio-cultural sustainability is emphasized. The old frugality is no longer enough, but immaterial consumption, more or less efficiency and harmony with natural processes is needed. The harmony with nature in production and consumption has been called ecomodernization by Joseph Huber (1995). The consumer's concern for his or her welfare and that of family members is a natural basis of consumption. The connection between one's own consumption and worldwide welfare is not self-evident. Consumer education is needed. Consumer education at its best empowers people.

The famous economist, John Kenneth Galbraith, had already named in the 1960s the wealthy, mainly Western societies as societies of affluence. The problem in these societies is no longer the lack of utilities, but that there is too much of nearly everything (Galbraith, 1965). A level of wealth was reached on which desires and interests had more to say in consumer choices than needs. Mika Pantzar (2000) even speaks about the invention of needs. Sociologist Kai Ilmonen (2007, p. 71) describes felicitously the complicated situation of a consumer.

The cycle of consumption begins in the market where the role of the consumer is as a chooser. From the viewpoint of a household, buying is not the only way to obtain commodities. They can be presents, they can be borrowed or produced by household work, they can even be stolen. Ilmonen also includes bought services in the category of commodity. The next role of a consumer is as a user. Commodities can be used for several functions: they can be worn, processed or used as utensils. Ilmonen has distinguished the use of commodities as expressing status and taste, in which case the consumer is a communicator. The consumer as producer/consumption worker is the fourth role, which the consumer takes when he or she processes bought raw materials in domestic production (Ilmonen, 2007, p. 70). Ilmonen does not specifically mention the removal of commodities from the household as waste. However, it has become very important because of concern about what is released into nature. Recycling and waste processing become increasingly important.

The relationships between economy, social issues, and ethics in the household have been studied by Brown and Paolucci (1979; Turkki 1999). They state that production of services that have a clear social goal is typical of the activity of the household. The ethical dimension is nearly always based on values. Activities serving material goals have complex connections with psychological, socio-cultural and even political factors. These connections interweave tight bonds between the social, ethical and economical in households.

According to the classic scholar of economic anthropology, Karl Polanyi (1968), economy is the use of natural resources for a livelihood. In present complicated societies, the relationship between economy and livelihood is not as simple. Consumers have more complicated motives of consumption, but the basic economic tasks of the household are today as before: 1. offer maintenance and shelter for its members, 2. create safety and continuity and 3. strive towards the welfare of the members. A household is a care economy institution.

In the global system, institutions of economy, private sector (sector 1), public sector (sector 2), non-governmental organizations (sector 3) and households form an interdependent net. Changes in any part of the economic system influence all the actors. When the functions and goals of economic institutions are different, they often lead to conflicts. In these conflicts households represent the moral economy standpoint. Basically, the household is an economic institution with the strongest emphasis on people's survival and welfare. Even if an individual strives in consumption for his or her own benefit, many economists agree that this ambition has deep-rooted social functions as well. The household is a basic economic institution to sustain man's livelihood. This function has remained while the household community has been transformed from extended family to nuclear family and further into rainbow families and several other modes. This function remains even in single-person households.

All of the changes described above force consumers to invest their resources more in the control of the household economy, anticipation and planning as well as division of domestic work among members. Bargaining of commodities requires many skills, but the bargaining of services requires new skills. It is no longer enough to evaluate the price-quality relationship, rather, the whole lifecycle of commodities has to be traced. The bargaining of services requires consumer to be able to evaluate the skills being bargained and adds administrative work to household chores. The educational system is challenged to teach these things more extensively and effectively to consumers.

Table 1 Current challenges and consumer education functions

Challenges	Consumer education functions: Advancing futures consciousness, and promoting welfare
Planetary threats to living beings	<ul style="list-style-type: none"> • Enhancing positive motivation, • Systems thinking and life-cycle consciousness
Dependency on world economy	<ul style="list-style-type: none"> • Critical alertness, • Capability to evaluate events in different parts of the world economy
Management of affluence	<ul style="list-style-type: none"> • Goal consciousness, • Knowledge of consumer legislation and policies
Inequality	<ul style="list-style-type: none"> • Ethical motivation and consciousness
Media and other new technology	<ul style="list-style-type: none"> • Media literacy, • Technology alertness and critical evaluation

Goals of Consumer Education in the 21st Century

In the beginning of the 21st century, several projects for the development of consumer education were financed by public money in Europe. The background of consumer education is consumer policy, and many central international institutions have paid attention to consumer education. The General Assembly of the United Nations accepted general guidelines for consumer education in 1985, in which governments are presumed to establish programs of consumer education. The Ministers Council of European Union issued a statement in 1986 requiring that consumer education be included in the curriculum of basic education. Furthermore in the Amsterdam pact 1997, consumer education was included in the rights of the consumers, which the member states are obliged to fulfil (Consumer Education in the Nordic Countries 2000 p. 9; Consumer citizenship education 2005, s. 15-16)

This article is an analysis of the focal European proposals and materials for consumer education. The following abbreviations are used in this text:

- **NORDIC2000:** Consumer Education in the Nordic Countries. Proposal of objectives for and content of consumer education in the compulsory school and at upper secondary school level in the Nordic countries. TemaNord, 2000, p. 599 København: Nordic Council of Ministers.
- **DOLCETA**, pages continually updated (DOLCETA). Parts: Consumer Education for Teachers > Introduction to Consumer Education > Aims and Objectives of Consumer Education.
- **NORDEST2009:** Teaching Consumer Competences - a Strategy for Consumer Education. Proposals of objectives and content of consumer education. Nordic Council of Ministers, Copenhagen, 2009. TemaNord, 2009, p. 588.

These documents deal with general education from children to adults. In addition to these, the analysis covers a document of the Consumer Citizenship Network, which concerns academic level education:

- **Consumer citizenship education. Guidelines (CCN2005).** Vol. 1 Higher Education. The Consumer Citizenship Network 2005. Victoria W. Thoresen (ed.).

I will first analyse the general principles and the emphasis each has, and will then map the themes and content areas of the documents. Finally I will compare the principles presented for consumer education to the view presented in futures education.

The role of a consumer and the goal of consumer education

All the documents studied here emphasize strongly the individuality of a consumer. The goal is a consumer who is autonomous, conscious, responsible and skilled. The objective of consumer education is indicated by the following quote:

“Consumer citizenship education encompasses attitudes, knowledge and skills connected to functioning in today’s society. It is responsibility learning which aims to contribute to the individual’s ability to manage his own life as well as participating in the stewardship of the global society’s collective life.” CCN2005 (p. 11).

NORDEST2009 (p. 19), which is the latest of these documents, states the following:

“Consumer education today should provide citizens with the tools and skills to have an influence. It should be re-evaluated in the light of contemporary challenges.” A CCN report (2005, p. 12) also emphasizes global solidarity.

In the documents, there is evidence of temporal development from a passive victim-consumer who is supported in his/her coping, to an active consumer citizen. Consumer citizenship, historically a central theme in the European concept of consumer (Trentmann, 2008), is

specifically emphasized in the CCN2005 report. Victoria Thoresen defines this citizenship in the introduction as:

"A consumer citizen is an individual who makes choices based on ethical, social, economic and ecological considerations. The consumer citizen actively contributes to the maintenance of just and sustainable development by caring and acting responsibly on family, national and global levels" (Thoresen, 2005, p. 7).

DOLCETA specifies:

"It is generally agreed that there is an urgent need to develop, strengthen and spread sustainable approaches and actions across the world. This requires a process of social change that affects all individuals and in which all individuals need to participate. O'Donoghue and Cusack (2008) stated that one of the aims of ESD is: "To empower individuals to actively participate in shaping an ecologically sustainable, economically efficient and socially just environment, while remaining mindful of the interconnectedness between the local and global dimensions."

Consumer citizenship is a new concept in the European discussion on consumer education, which has been developed in the Consumer Citizenship Network and has been adopted, for example, in DOLCETA. This concept is a combination of two concepts of the consumer and the citizen. The consumer concept has shifted from a concept of a weak victim consumer to emphasize an active person, whose everyday decisions and consumption actions influence not only the market, but the whole society, and even the whole globe. The concept of consumer citizenship implies an ethical obligation: he/she is expected to adhere to the commitments as a citizen and to strive towards the common good according to the principles of sustainable development, but at the same time not forgetting his/her own rights.

The consumer concept is acquiring new content now, when even nature itself is considered as to be a kind of producer. Even a person living outside the monetary system is understood as a consumer in the sense that he/she consumes natural resources. This position reflects a return to the concept of substantive economy proposed by Karl Polanyi:

"The substantive meaning stems, in brief, from man's patent dependence for his livelihood upon nature and his fellows. He survives by virtue of an institutional interaction between himself and his natural surroundings. That process is the economy, which supplies him with the means of satisfying his material wants" (Polanyi, 1977, p. 20)

The citizen in this combined concept also has new content. Instead of the official citizenship of a state, it refers to an unofficial, experienced citizenship of the global community. Consumer citizenship is understood in the reports as a sought after identity, an ideal, towards which consumer education is obliged to strive.

The coping of a consumer is dealt with in NORDEST2009 broadly as concerning life conduct. This is an extension when compared to the earlier NORDIC2000 report, which covers only the

activity as consumer. NORDIC2000 parallels the caretaking of the family with responsibility for one's own life, fulfilling societal obligations and taking care of the environment. The other, later reports emphasize sustainable development, which was originally proposed in the Our Common Future report (1987). Usually the term is used in connection with ecological sustainability, but it covers both social, economic and cultural sustainability as well. Care for the family is given special emphasis in the NORDEST2009 report (pp. 26 - 27), and it is discussed in terms of management and participation in a household economy. In addition DOLCETA highlights the importance of the consumer from the point of view of the functioning of the market.

Principles, themes and substance areas

The analysis of the definitions of the role of a consumer and functions of consumer education already shows that a shift has occurred in the emphasis during the first years of the 21st century. Table 1 presents the analysis of the contents of the documents, dividing them into principles/themes and substance areas. Some measure of specification and restructuration has occurred, compared to the earliest document, the NORDIC2000 report. NORDIC2000 provided only a general critical evaluation of the everyday skills in relation to sustainable development and to the ethical principles of the lifestyle.

The common goals in the later reports are:

- capability for activity in harmony with sustainable development, even sustainable consumption,
- ability to evaluate commercial influence as well as obtain and handle information (specially media literacy), and
- consciousness and capability to utilize regulations concerning consumers' rights.

The definition of principles is more extensive and detailed in CCN2005, because the purpose of it is to educate not only capable consumer citizens, but specialists of consumer citizenship as well.

An interesting detail is that NORDEST raises issues of the management and participation in the household economy as one of the focal substance areas. This deviates from the other documents. Activity as a consumer and the control of household economy is an essential part of coping and striving for welfare. Moreover if this basis collapses, there are severe consequences for the members of the household and the family. The economy of a household is, more clearly than any other economic institution, a care economy institution.

The relationship between the economy and the social factors in the household has been studied by the home economists Brown and Paolucci (1979, pp. 40 - 47; Turkki, 1999, pp. 12 - 18). They state that it is characteristic of the activity of a household to produce services that are explicitly social-goal oriented. Household economy serves the members of the household and the household community by producing welfare, which does not require economic utility.

Recently households have begun to be seen as active agents who influence the entire society (Richarz, 1998). To indicate this, efforts have been made to develop means for the economic circle of the household, which partly functions outside the monetary economy, to become visible. These include developing a measure of the monetary value of household work. According to such measures, the value of the household has been found to cover 25 - 60 percent of the GDP in different countries. For example in Finland, it accounted for 40% of the GDP in the year 2001 (Varjonen, 2000; Pietilä, 2000; Varjonen - Aalto, 2005).

The NORDEST2009 document sets one goal as the management of a household and the participation in household economy (2009, s. 33):

"The learner learns how to responsibly maintain the functioning of the home environment by allocating resources and making decisions. Learners acquire the ability to evaluate factors like the consumer's household social relationships, time management, leisure and chores. Learners are able to assess how consumption habits influence our wellbeing, ability to work and our financial situation. "

This comment is in line with the principles of learning holistic life conduct as well as the principle of learning practical skills in real-life situations, which were stated in the document.

Figure 1 below shows the roles of the consumer and respective activity areas expressed in the documents analysed.

Futures education and consumer education

To conclude it is useful to study the contribution of the viewpoints that were expressed about futures education to the study of the new goals set for consumer education. In CCN2005 and NORDEST2009, the emphasis has been moved to cover futures education. In NORDEST2009, the focus is on evaluating the long-term impact of one's own activity and the capability to participate in sustainable development. Here special attention is paid to developing positive and ethical motivation and responsibility for the future. Both CCN2005 and NORDEST2009 present the concepts of futures perspective or foresight (NORDEST2009, p. 29, 41; CCN2005, p. 25).

In futures education several researchers have highlighted the importance of positive futures images for human motivation and for raising people's futures-hope and futures-will (Gidley, 1998; Hicks, 2002; Halinen - Järvinen 2007). Dator (1998, p. 9) even emphasizes the evaluation of the preferences of futures generations. Mikko Rask (2008, p. 120) concludes:

"The central tasks of knowledge about future are to construct alternative futures, their evaluation and to influence in the future (Niiniluoto 2001; Bell 1997; Masini 1994). The interests are tied with this so, that there is no impact without the interests, which mobilize the activity."

The importance of futures images is not yet recognized in the documents analysed, though they comment on the futures perspective and the long-term impact of one's activities. Moreover the emphasis of futures education is often found in the futures images. The creation

of alternative future images is already a stable practice. Three kinds of futures are usually mentioned: the possible, the probable and the wished-for futures. Hicks emphasizes that one has to think about how local, national and global futures are interdependent (Hicks, 2002, p. 14).

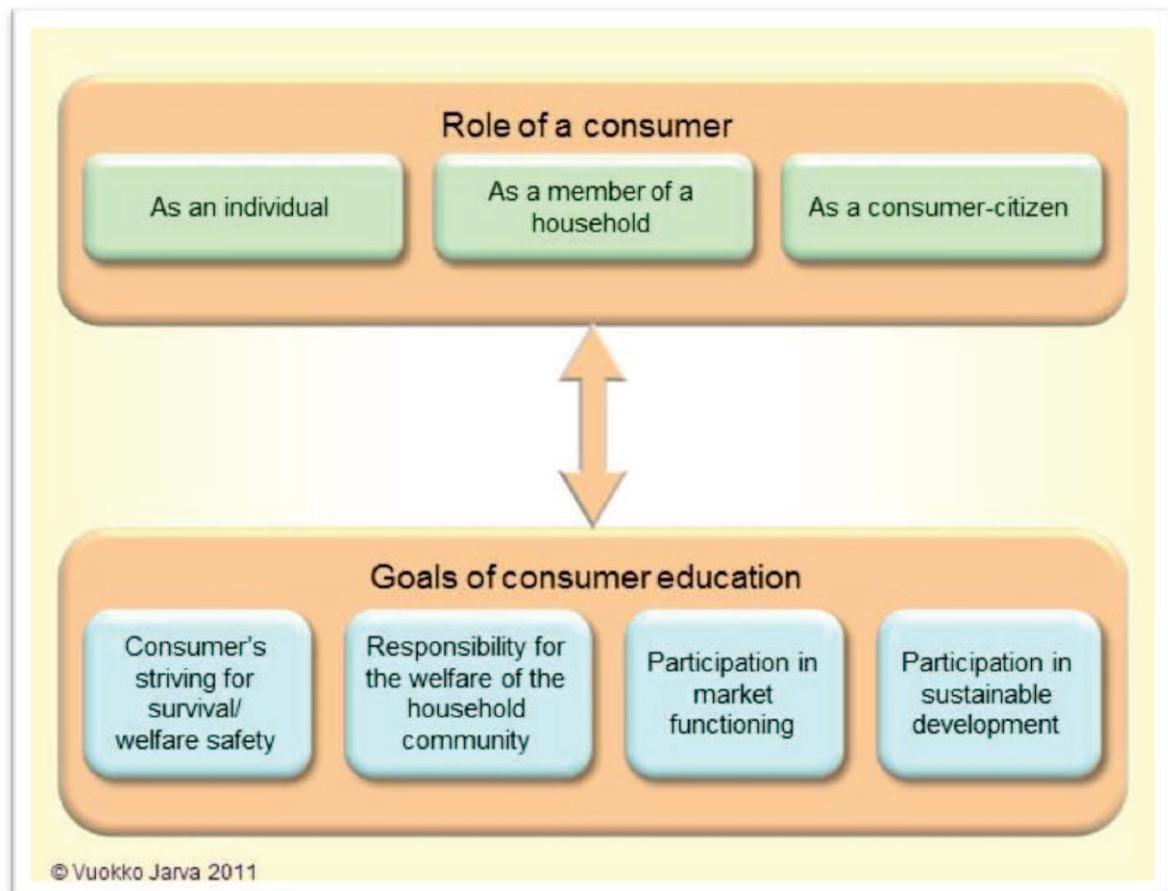


Figure 1 Roles of consumer and the activity areas expressed in the documents

The table below gives more detailed information on the content of the reports.

Table 2 Themes and substance areas of consumer education

	NORDIC2000	DOLCETA	CCN2005 academic level	NORDEST2009
Principles/ Themes	<ul style="list-style-type: none"> Ability to critical evaluation Everyday readiness to choose a lifestyle in harmony with ethical principles and sustainable development 	<ul style="list-style-type: none"> Sustainable development Consumer citizenship Media literacy Consumer rights 	<ul style="list-style-type: none"> Activity based on values Critical and inquiring attitude Prevention of harm Participatory democracy Rearranging and updating of outdated information Action towards global solidarity Participation in sustainable development 	<ul style="list-style-type: none"> Media and technology literacy Sustainable consumption
Substance areas			<ul style="list-style-type: none"> Quality of life and life styles 	
			<ul style="list-style-type: none"> Consumerism (history and economics) 	
	<ul style="list-style-type: none"> Private economy 	<ul style="list-style-type: none"> Control of private economy 	<ul style="list-style-type: none"> Control of private economy 	<ul style="list-style-type: none"> Management and participation in household economy Management of own money
	<ul style="list-style-type: none"> Right and responsibility of a consumer 	<ul style="list-style-type: none"> (As theme) 	<ul style="list-style-type: none"> Rights and obligations of a consumer 	<ul style="list-style-type: none"> Rights and obligations of a consumer
	<ul style="list-style-type: none"> Commercial influence 	<ul style="list-style-type: none"> (As theme) 	<ul style="list-style-type: none"> Advertising manipulation and information 	<ul style="list-style-type: none"> Marketing and commercial information
	<ul style="list-style-type: none"> Consumption, environment and ethics 	<ul style="list-style-type: none"> Responsible consumption 	<ul style="list-style-type: none"> Consumption and environment 	<ul style="list-style-type: none"> Sustainable consumption
	<ul style="list-style-type: none"> Food 		<ul style="list-style-type: none"> Food and nutrition 	
	<ul style="list-style-type: none"> Safety 	<ul style="list-style-type: none"> Health and safety 	<ul style="list-style-type: none"> Safety 	<ul style="list-style-type: none"> (Through media and technology literacy, included in management of the household)
			<ul style="list-style-type: none"> International consciousness 	
			<ul style="list-style-type: none"> Futures perspectives 	
		<ul style="list-style-type: none"> Utilization of services 		

The whole of the latest reports, concerning both substance areas and skills, is described in Figure 2 below.

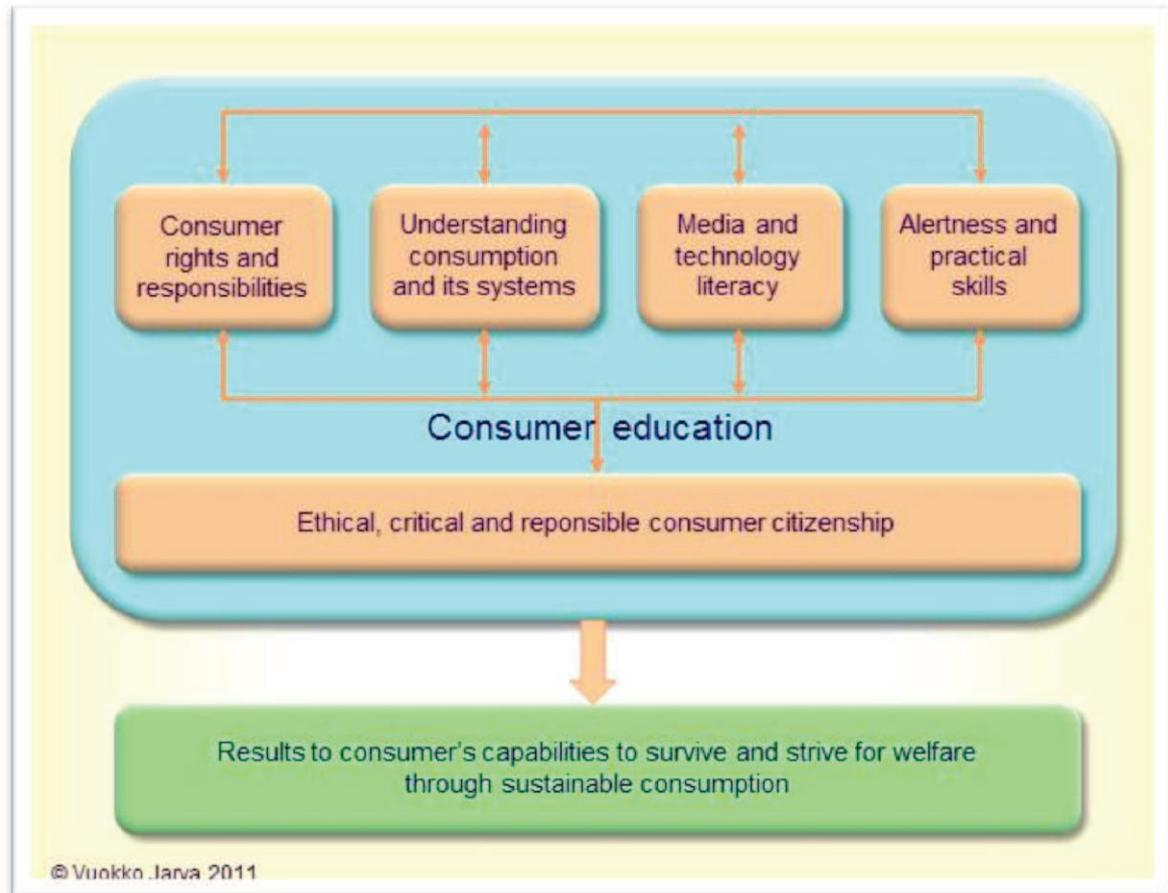


Figure 2 Substance areas of the reports and converging skills.

The analysed documents emphatically stress the importance of the environment and its extension into the global and even universal. Holistic system-concepts are discussed and those have long been important for futures research and futures education. Furthermore consumer education values relating one's own consumption and one's activity in general to wider connections. Perhaps this is most visible in connection with sustainable development, when the lifecycle of commodities is widely used.

Both viewpoints of education emphasize the anticipation of the impact of one's own decisions and deeds (Bell, 2002, p. xiii). Hicks (2002) also emphasizes the anticipation of change.

The construction of meaning and the clarification of values are important in both consumer education and futures education. In consumer education, the discussion is anchored in sustainable development. However in futures education the meaning is understood more widely.

"Knowing what is possible and probable helps us to guide our actions, but we need to know more. We also need to know what is desirable. Which futures

should we want to achieve? Which futures should we try to avoid?" (Bell, 2002, p. xiii).

The finding of answers necessitates moral analysis. We have to engage in dialogue with others concerning what is good and what is bad to ourselves as individuals, our families and our local community, our nation, and the whole community of humankind and all the living beings.

The concept of the consumer-citizen emphasizes involving the world in the role of a consumer. The concept of an individual in futures education could be called futures-citizen. The active and responsible participant is the ideal model in both of them.

The emphasis in consumer education is in setting goals and planning the consumer's own household and monetary economy. The setting of wider goals and life planning is referred to only in cases of life conduct and life style choice. These are presupposed to be in harmony with sustainable development and ethical values. One important matter that has been emphasized in futures education but not yet in consumer education is the construction of alternatives, even in planning.

The activity itself is discussed in futures education in terms of creating the future. Nonetheless all activity is actually making the future, but highlighting it helps in the understanding the value of one's own activity.

The focal subject in the documents in consumer education is the consumer's coping. Special emphasis is on the weak consumer groups such as the children and youth. The preventive function is expressed particularly in the proposals to promote media and technology literacy. NORDEST2009 also speaks about the care of the household, whereas DOLCETA concerns the functioning of the market and all participation in sustainable development. The centre of gravity in futures education has been elsewhere than in an individual or in a close community. Instead wider substances have been emphasized. Nevertheless the definitions of the goals remain there, usually on a fairly general level: better living, good society and desirable futures.

The evaluation of one's own activity remains fairly bleak from both perspectives. Generally speaking, both stress the importance of an ethical attitude and also cover the evaluation of one's own activity in general. Consumer education has the consumer's safety as centre of gravity and it presumes an evaluation of the safety of one's own activity. Perhaps the clearest criteria that is expressed in consumer education documents is the continuity and stability of one's own life and household.

Finally I want to make some comments on how futures consciousness can be enhanced by consumer education:

- Learning to evaluate past experience, empowering futures-will through skills to create positive futures images, transforming needs and creating new needs,
- Learning to relate one's own choices to other levels of the world system,
- Learning life-cycle thinking,

- Learning to use positive futures images as a basis of goal setting and to construct alternative futures images and planning,
- Learning to evaluate consequences of one's action in relation to the goals and to responsible ethics concerning other people, all living beings and the global system

Conclusion

During the first years of the 21st century, the thinking in consumer education has undergone remarkable developments. David Hicks (2002, p. 17) expresses the goals of futures education:

“The particular aims of futures education are to help teachers and pupils

- *develop a more future-orientated perspective both on their own lives and on events in the wider world;*
- *identify and envisage alternative futures which are just and sustainable;*
- *exercise critical thinking skills and the creative imagination more effectively;*
- *participate in more thoughtful and informed decision making in the present;*
- *engage in active and responsible citizenship, both in the local, national and global community, and behalf of present and future generations.”*

Most of these goals can be found in the consumer education documents analysed, but they are not yet elaborated on and not all of them have been taken into consideration. However the discussion on consumer education has approached futures education by assimilating some characteristics of it. For example the importance of consumption has attracted attention in futures education especially with respect to sustainable development. As I see it, consumer education should be an essential part of futures education. This concerns especially the mass consumption of commodities, necessary and luxurious.

This article has not addressed the changes in pedagogical thinking that have occurred. In the earliest report, NORDIC2000, the emphasis was on the mediation of knowledge but in later documents it has shifted on the one hand to values, and on the other, to practical skills.

NORDEST2009 (p. 25) states that the basic needs of the consumers and the specific characteristics of their consumption have to be the basis for teaching. It has to serve the everyday needs better and emphasize holistic, systemic views instead of details. Moreover teaching has to strengthen positive motivation, the ability to anticipate, systemic thinking and consciousness about the lifecycle of the products. Teaching also has to be based on social learning.

One more important point needs mention: the NORDEST2009 report pays attention to consumption, advertising and marketing concerns, and even to small children, as they are also able to use money as well as information technology, enabling consumption. That report proposes that consumer education should even cover pre-school children.

It remains to be verified how consumer education will be actualized on the basis of the official statements and the proposals. At the moment, for example, in Finland consumer education is not included in the curriculum on basic education. However, incorporating it in various subjects as a cross-curricular theme is apparently very difficult to achieve.

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Sustaining the Life Energy of the Profession: Insights from the Quantum Holomovement Principle

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Abstract

This paper draws upon constructs from quantum thinking to position the profession beyond dominant Cartesian-Newtonian thinking (fragmented specializations with no common philosophical core). It tenders the idea of gaining insights around home economics philosophy from the holomovement principle, an influential quantum construct. The paper identifies and elaborates upon five key concepts borrowed from quantum physics and applies them to home economics philosophy and practice: implicate and explicate order, the ensemble, perpetual dynamism, locality and non-locality, and complexity-consciousness (entropy and extropy). If we want to ensure a sustainable, future-proofed profession, we must nurture the deep energy core of our profession. The holomovement principle and related quantum constructs help us re-envision our future.

Key words: home economics, holomovement, quantum, philosophy, Newtonian, hyper-specializations

Caveat

First person pronouns (I, we, us, our) are used in this paper to refer to members of the home economics profession, by which ever name is used. Also, this writing convention is used because the author is a character in the narrative developed in this paper.

Introduction

Home economics arose as a discipline and a profession in the late 1800s (Brown, 1993), during a time when Newtonian, reductionist, mechanistic science reigned. Informed by the intellectual contributions of René Descartes (Cartesian thought and the machine metaphor) and Isaac Newton (classical science), this world view has held sway for over 300 years (originating during the 17th and 18th centuries) (Korten, 1998; Pike & Selby, 1988; Sokal, 1996). It deeply influenced the trajectory of the evolution of the home economics profession. First, this paper explains the nuances of Cartesian-Newtonian thinking then provides a brief overview of the emergence of its contender, quantum thinking. The remainder of the paper tenders the idea of gaining insights around home economics philosophy from the holomovement principle, an influential quantum construct.

Cartesian-Newtonian Thinking

In brief, Cartesian-Newtonian thinking views reality as compartmentalized and fragmented, one in which phenomena and events are seen as isolated and separate from each other. It

enables people to divide knowledge into separate, siloed disciplines, specializations and subjects. A linear problem/solution and cause/effect interpretation of reality prevails, as does dualism. Dualism presumes that two realities cannot talk to each other, cannot act upon each other and that one is superior to the other (e.g., human-nature, matter-spirit, science-religion, facts-values). Analysis (a focus on the parts) is preferred to synthesis (a focus on synergy and integration of the whole), as is objectivity versus subjectivity. As well, this worldview privileges patriarchy. Males are seen to use reason and logic (the preferred qualities of citizens) while women are reflected as soft, secondary, intuitive and attuned with nature (McGregor, 2011; Pike & Selby, 1988). Home economics was born at the apex of this worldview's power (Brown, 1993).

Newtonian, reductionist, mechanistic science has "profoundly influenced the Western worldview up to present day so that there are few areas of human activity left unaffected by its assumptions and methodologies" (Pike & Selby, 1988, p. 24). Critics of this worldview (this paradigm) do not suggest that it is wrong; only that it has its limits. Korten (1998) acknowledged that "it gave rise to extraordinary advances in scientific knowledge and technology that brought previously imaginable affluence" (p. 10). However, this technological progress came with a price. It led to a society focused on materialistic, monetary, and market values, and to a profound shift away from focal things and practice - away from the home, the family, and the support of communities (Borgmann, 2000).

Home economics also was seduced by the power of Newtonian, reductionist, mechanistic science. A century later, many home economics scholars lament how technical the profession and discipline have become (e.g., Brown, 1993; McGregor et al., 2004). There is general agreement that we have evolved into a very fragmented state. Whether commentaries are from North American, European, Australian, African, Middle Eastern or Asian sources, they tend to claim that the profession is too fragmented, and has been reduced to too many different pieces and specializations, with too little in common. Brown (1993) maintained that home economics professionals who do not see the world holistically have a mind full of little islands with no bridges between them. This image is compelling. It paints a picture of a collection of experts in food, clothing, housing, consumption and family dynamics practicing on individual little islands with no way to talk to, or work with, each other, let alone with other disciplines. By neglecting to challenge this situation, informed by the hegemonic Western intellectual outlook (Sokal, 1996), home economics practitioners perpetuated this way-of-being in the world (Pendergast & McGregor, 2007), whether intentional or not. The results are the same, and need to be redressed.

Quantum Thinking

In the 1920s, 20 short years after the home economics discipline was founded, a world-altering shift from classical sciences to quantum sciences emerged, marking a break from the 200-year-long Cartesian-Newtonian hegemony (Stapp, 1995). Sokal (1996) clarified that the emergence of quantum physics led to "deep conceptual shifts within twentieth-century science, [which] have undermined Cartesian-Newtonian metaphysics... and demystified the substantive content of mainstream Western scientific practice [and thought]" (p. 217). Science moved from a focus on creating a picture of nature to a focus on creating a picture of our relationship with nature. The focus of science shifted away from the characteristics of

particles themselves to our knowledge of them, and to how obtaining that knowledge through observation actually changes the particle itself (Sokal).

With this profound shift in thinking, quantum physics enabled people to move away from the limiting constraints of Cartesian-Newtonian thinking. New concepts became available to help reframe the world, including: emergence, interconnectedness, complexity, relational (holistic) thinking, discontinuity, integral thinking, uncertainty, chaos as order emerging (rather than order lost), and multiple levels of reality (McGregor, 2010a, Selby, 1999; Sokal, 1996; Wheatley, 1999).

Positioning Home Economics within this Paradigm Shift

This profound re-conception of science opened deep, new avenues of intellectual thought for those inclined to follow them: how to reframe politics, economics, society and our relationship with nature, along life-centric lines (Sokal, 1996). However, during the last century, members of the home economics profession continued to embrace the tenets of Cartesian-Newtonian science, which sees things as isolated, disconnected and not related (picture the balls on a pool table). We do little good for individuals, families or humanity if we continue to embrace a fragmented view of the world. It only leads to more isolation and disconnectedness at a time when the complexity of our contemporary world demands recognition of the relationships and solidarity needed for harmonious co-existence, even survival.

There are two types of fragmentation, internal and external. Internal fragmentation refers to the personal loss felt due to fear, anxiety, stress, misguided self-interest and the disintegration of social norms governing behavior, thought and social relationships. External fragmentation refers to the boundaries, real or artificial, that are placed between families and society, the economy, the political system and the ecosystem. Fragmentation also is reflected in the boundaries that people have put up within our field, leading to specializations, narrow areas of expertise, and many different names (e.g., McGregor, 2010b). By continuing to recognize separate fields of expertise, sub-disciplines and micro-specializations within our profession, without agreement on a guiding philosophy to hold us together, we remain complicit in perpetuating a fragmented world view (McGregor, 2006), again whether intentional or not.

The Holomovement Principle Applied to Home Economics

Home economists can learn many lessons from the new sciences of chaos theory, quantum physics and living systems (McGregor, 2010a). In particular, we can gain deep insights into home economics philosophy and practice by drawing on a particular quantum physics principle, the holomovement (Bohm, 1980). This idea combines the words *holo* and *movement*, which stem from the Greek words for wholeness (undividedness) and movement (*holoteles*, entirely, complete in all respects). Instead of seeing the profession as comprising bits and parts from many individual areas of expertise and specializations, we now have a concept that lets us view the profession as an undivided wholeness in flowing movement without borders, creating a new fabric for our professional reality.

Instead of perceiving ourselves as a collection of separate parts, we can conceive of the profession as an undivided whole, in perpetual, dynamic flux. From this perspective, we can see our profession as a collection of different aspects of one whole and unbroken movement. In order to develop this idea, this paper identifies and elaborates upon five key concepts borrowed from quantum physics and applied to home economics philosophy and practice: implicate and explicate order, the ensemble, perpetual dynamism, locality and non-locality, and complexity consciousness. The intent is to conceptualize a home economics philosophical holomovement.

Implicate and Explicate Order

From the holomovement perspective, we can say that each facet of the profession contains the total order of the “home economics” universe, including the past, present and future. Everything folds into everything else. Bohm (1980) introduced two kinds of order in this universe—the implicate and the explicate order. Implicate is from the Latin *implicare* meaning “to fold inward.” Explicate is from the Latin *explicare*, meaning “to unfold” (Phillips, 2004). This concept enables me to suggest that the profession has implicate and explicate order. The implicate order is implicit, underlying the whole of the profession and is invisible; yet, it is fundamental to the entire profession. We tend to call this our philosophy, mission and value system.

When professional practice manifests itself so that others can actually see it, others are seeing the visible, explicate order (home economists in action). This paper is concerned with the invisible implicit order, the fundamental, philosophical foundation for the profession that *underpins* external manifestations of practice. This foundation is an unbroken and undivided whole, the core of the profession. A core is the tough, central part of something that contains the seeds; it is the depths of something, the most important part of a whole (Simpson & Weiner, 1989).

Bohm (1980) clarified, as well, that a holomovement cannot be readily defined or measured. There is no way to describe it or specify it, because to do so would divide it. Only through particular appearances (external manifestations) is the holomovement known, and then only glimpses of its shadow are possible. By association, we can say that it is very hard to quantify home economics philosophy; practitioners express their philosophy by the way they practice. It makes its appearance when they act in the role of a home economist. Imagine a slinky. When the slinky is inert, it just sits on a desk or in your hand. If it is set in motion, the coils separate (i.e., we get a glimpse of the core section of the whole); yet, the exposed core is always connected to the whole, *and* the entire slinky is in motion until it comes to rest (and even then, there is still energy in the core awaiting release).

To help explain this idea further (especially the reference to glimpses of shadows), I will use the analogy of a regular film versus a holographic film, prefaced with a brief discussion of how three-dimensional holographic images are made. The holomovement principle and the holograph go hand-in-hand. Talbot (1991) explained how holograms are formed. The object to be photographed is bathed in the light of a laser beam. Then, a second laser beam is bounced off the light-bathed image, capturing the image on film. Instead of pixels (like in a regular

photograph), lasered images look like swirls of light and dark *lines* (concentric circles). When a third laser beam is applied, a three-dimensional image appears—the hologram.

Imagine this image is a rose. If the image (the developed film) were cut in two and then illuminated by a third laser, each half still contains the entire image of the rose, just with a more limited viewpoint. Continued divisions lead to degradation of resolution and the loss of fine details, but the whole is still there (Talbot, 1991) (see Figure 1). In reference to this phenomenon, Bohm (1980) proposed that sub-atomic particles are never separated, are not individual entities; rather, at some deeper level of reality, they all are extensions of the *same fundamental something*. This metaphor enables me to suggest that every home economist in the world is an extension of the fundamental *essence of home economics*. Even more profound, quantum physics allows me to suggest that every home economist can know what others are doing because each one of us contains the information possessed by the whole (in our case, a philosophical core) (Talbot, 1991).

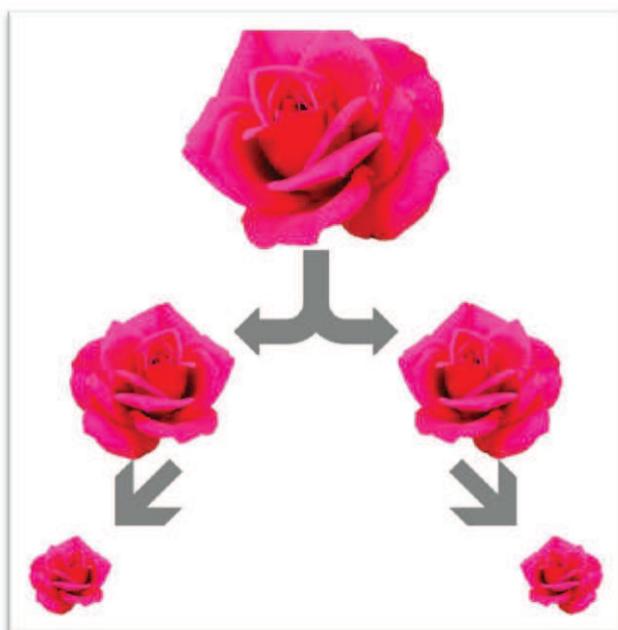


Figure 1 How holograms work (divisible properties)

Back to the idea that each part contains the whole (the slinky analogy). When we look at a holographic film, we do not see an image of the object that was photographed. Instead, we see a pattern of intricate, concentric circles that look like rain drops on the surface of a pond—the wave patterns of the image (Talbot, 1991). If a piece is ripped off a regular, pixel photograph, the picture is now incomplete because each section of the film from which it came stored information only about that part of the picture. As mentioned, if a piece of holographic film is broken off, each fragment contains the entire image of the whole, just in lower resolution (remember the rose, Figure 1). The whole is fuzzy, but still intact (Keepin, 1993). Picture the drone called R2D2, from the iconic movie *Star Wars*, projecting the holographic image of Princess Leah to Obi-Wan Kenobi. If I tried to touch this holograph

projection, all I would find would be focused light and a handful of air (unless the holograph has been embossed on paper or plastic). The disturbed image would remain intact because it cannot be destroyed if part of it is interrupted. It only gets *distorted* (fuzzy) until that part flows back into the whole again.

This paper anticipates that a sustainable and future-proofed profession is probable if we use this holomovement concept. Each home economist's professional identity is a shadow of the whole because it only *appears* to be independent (Sharpe, 2000). Separateness in quantum thinking is considered to be an illusion; everything and everyone really are connected (Talbot, 1991). Even more exiting is that everything is in perpetual movement, and every portion of this flow contains the entire flow (Bohm, 1980; Talbot, 1991). Imagine a lava lamp. The viscous fluid is always in movement, with new things bubbling up and then falling back into the whole again. The whole is embedded in all of the parts. Everything is interconnected. All home economists are part of a larger whole, that is part of them. The implications of this perspective are profound. We never have to feel alone again.

The Ensemble

Bohm (1980) had another idea that is useful as we develop this metaphor of a professional holomovement. He suggested that the *context* within which a holomovement operates plays a key role in determining which segment(s) of the holomovement lift up and make themselves explicit (i.e., become visible). Bohm proposed that when the contents of the holomovement lift up to become something that can be seen, we then perceive an *ensemble of parts*, which continues to relate to the invisible whole. An ensemble is a group of complementary parts that contribute to a single effect (Simpson & Weiner, 1989), a music quartet, for example.

Along the same line of thinking, using the notion of implicate order, I can suggest that there is no isolated element in the ensemble of ideas that constitutes the profession. No one philosophical or practical aspect of practice can be understood without considering how it relates to others, because they are all interconnected. They cannot be separated. Selby (1999) called this relational holism. Picture a spinning airplane prop, comprising three blades. When spinning, it gives the *appearance* of a solid, separate disk. This separateness is an illusion caused by a rapid sequence of unfoldings. What we see at any point in time is actually a *totality of the ensemble of parts*, all present together in a continual process of unfolding and folding. These parts intermingle and interpenetrate each other, creating a whole (Talbot, 1991).

If we accept this notion of wholeness, then we can suggest the profession's *ensemble* (i.e., the same philosophical core) should apply to all contexts of practice. However, because only certain aspects of the holomovement lift up at one time, everything does not rise up at once. Given this fact, Bohm (1980) suggested we must know the context in which something is unfolding in order to know how much *sameness* we can expect. We cannot expect every practitioner to behave in the same way all the time (explicate), but we can expect them to adhere to and draw energy from the same invisible core (implicate), the foundation of everything. In our profession, this invisible foundation comprises paradigms, principles, philosophies, values, beliefs, meanings and assumptions that shape practice. Their

manifestation is dependent upon the context and the resultant impact upon the context is dependent upon which aspects of the implicate order (philosophical core) informed practice.

In a related line of thinking, Bohm (1980) offered the idea of *generative order*, in which the invisible order (e.g., philosophy) helps generate structure for people's visible work. The parts of the whole that manifest in contexts are still enfolded in the whole of the profession. *How* these philosophical parts manifest will be different in different situations. But, the implicit order (the invisible, philosophical foundation) still shapes everyone's thinking, actions and reflections. This influence is felt because the holomovement of the profession lies under the world that we and others actually "see." It unfolds and then folds back into itself, continually. It is the invisible core that sustains the profession.

Perpetual Dynamism

The future is constantly in process, in flux (remember the lava lamp metaphor). Every portion of the flow contains the entire flow, called perpetual dynamism (Keepin, 1993). Because the whole and all of the pieces of reality are constantly in process (i.e., in a state of emergence and be-coming), I can suggest each professional home economist is in the process of becoming philosophically savvy. Some will be ready to "see" some parts of the profession's holograph (philosophy informing our practice), but not be ready to see other parts. When the time is right, people will be able to see the other pieces of their new professional reality. For the time being, some aspects of the professional core are important in some people's contexts, while other core aspects are not.

If members of the profession eventually can embrace some or all of the ideas being postulated about what should constitute home economics philosophy(ies) (see McGregor, 2009, McGregor & MacCleave, 2007), they can accept the idea that no single aspect of their practice stands alone. All core aspects are connected to each another. This way of thinking reflects holistic practice; that is, continually working towards the formation of a professional whole through creative evolution (be-coming and emerging). As people work to create this new whole, specific manifestations of the core philosophy appear as ripples on the surface of the whole (Keepin, 1993). Consider the raindrop on the water surface metaphor again; through the ripple-effect, a small drop can make a huge difference. As we live each day as home economists, we should never lose sight of the whole (the underlying orderliness) or the need to continually strive to be creative as we perpetually create this whole, together. Each of us can make a difference.

Locality and Nonlocality

Bohm's (1980) notions of locality and nonlocality can be extended to this professional holomovement metaphor. Nonlocality means simply that everything connects with everything else; that is, things are not separate. The implicit order (the invisible fundamental essence of the profession) is nonlocal: all aspects of the ensemble are interconnected. It is when we try to divide parts of this ensemble that things become local, a quantum term for separated. For example, if we bring a fragmented approach to our practice (bits and pieces), without appreciating that they are all connected through a core philosophy, we get practice that does not percolate up from the life energy of the profession; instead, our philosophically

ungrounded practice drains energy from the profession. McGregor et al.'s (2004) article tried to describe the effect of locality (fragmentation) on the profession. It argued the profession is addicted to the technical mode of practice, predicated on Cartesian-Newtonian thinking, and concluded we need to strive for a common philosophical core; in effect, strive for nonlocality.

It is important to acknowledge that viewing things as interconnected (nonlocality) does not rule out local influences. But, if the local (separateness and fragmentation) becomes universal, then people lose the ability to see things as connected (Biase & Rocha, 1999). This unfortunate side effect of excessive locality has happened in our profession. We have not embraced the idea of a core of life energy for the profession; instead, we have all gone our separate ways, leading to a profession that is not vibrant and not sustainable. Its energy core is being drained at a rapid pace, and is not being replenished.

But, quantum principles give us hope. Because locality (fragmentation) is less organized than nonlocality (connectedness), a fragmented professional system will lose entropy. This eventuality is the exact opposite of what a vibrant, sustainable profession needs. We need entropy, an increase in intelligence, information, energy, vitality, experience, diversity, opportunity and growth (Sharpe, 2000). This entropic state is achieved through connectedness, because systems experiencing entropy have higher energy levels than those that are fragmented.

Complexity-Consciousness

Finally, to counter the idea of entropy, Bohm (1980) used the concept of extropy (the tendency for systems to grow more organized as they become more complex). He also used the idea of consciousness. Bohm understood it to be a series of moments in which one moment gives rise to another (implicate becomes explicate, and so on) leading to an accumulation of understanding. From this perspective, we can suggest that each home economist displays an unfolding of the consciousness of the profession. We can further suggest that any thought or idea about practice that comes into one's mind percolates up from the deep recesses of the professional holomovement. This holomovement is the life energy of the profession. Each of us arises from this energy core. Likewise, when necessary, we can reenter this energy force to augment our evolution and strength (Sharpe, 2000). It sustains us. To mirror Sharpe's (2000) suggestion, the consciousness of home economics is one; each home economist displays an unfolding of this consciousness.

Bohm (1980) further referred to extropy as increasing *complexity-consciousness*. Complex consciousness emerges from the formation of simple connections that lead to more and more complex and numerous connections. Interestingly, in some instances, the complexity of the nonlocal (global) movement may have to abate for a while to allow room and energy for more local growth. Indeed, local action (fragmentation) often is a first necessary step to create the elementary parts needed for consciousness and complexity to arise.

Applying this idea to home economics, we can say that the profession has the potential to become more complex if its fragmented parts can merge and become more complex. As the profession becomes more complex, it will become more interconnected (i.e., non-local). As a

new whole emerges, individual elements of the professional system tend to behave in new ways. People begin to relate to each other over distances, although not connected by immediate physical contact. People involved in this dynamic process become both a by-product of complexity and an actor in perpetuating complexity; hence, there is more consciousness in the profession. This force strives toward, even beyond, the initial complexity of the profession (Sharpe, 2000).

Back to the beginning—our ultimate professional reality need not remain a collection of separate people and ideas on individual islands (as it appears to us right now). Rather, it can be an undivided whole that it is in perpetual, dynamic flux. Talbot (1991) asserted people can be part of an undivided whole and *still* possess unique qualities. Seeing ourselves as part of an *unbroken profession* means we will each be individual professionals, but it will be hard to determine where one of us ends and the profession begins. A water metaphor helps here. Imagine eddies (swirling pools of water) in a stream. At first glance, they appear to be separate eddies. But, soon it becomes hard to tell where the whirlpools end, and the stream begins. Such would be our professional holomovement. While maintaining separate identities, each home economist would be drawing strength from the life energy core underlying and sustaining the whole, unbroken profession.

Discussion and Conclusion

Everything in the profession, our base reality, is made of the seamless holographic fabric of the implicate order (we cannot see this). This is our energy core from which everything in our practice is drawn. In our waking state, we unfold from this underlying energy core, but stay connected to it. The reality in which we work, on a daily basis, is the explicit order—our waking state. The underlying, invisible implicate order is our professional consciousness, our guiding light and our professional compass.

I think the photograph of our profession was taken using a regular camera that generates a pixel-based, paper copy. When one piece is ripped off, the picture is incomplete. Using the holographic film metaphor again, it is time for a new image of the profession to be taken so that the whole is encoded within it. The holographic image projected to us and the world (remember R2D2 from *Star Wars*) would represent the unfolded image of the profession, made visible through what people see us doing. But, at the core of this image is the invisible, yet fundamental, philosophical heart of our work. Because images of ourselves as professionals flow in and out of this film, yet are constantly anchored to the core, we have the opportunity to step in and out of the core and constantly form and change. This is the professional holomovement—the whole is moving as one (Talbot, 1991).

Fragmentation (locality) is necessary in order to create the parts that eventually form connections leading to complexity and evolution of systems (nonlocality). As well, there is an underlying force in the universe making the universe move towards increased complexity and interconnections (Sharpe, 2000) (the opposite of the Cartesian idea that the universe is a clock winding down to nothing). The notion of the universe gaining energy through the amalgamation of fragmented parts provides justification for our 100-year-long journey along the path of fragmentation. Now, we can say we have the parts needed to merge and create something more complex and evolutionary.

Members of the profession are encouraged to take the time to focus on the idea of a professional holomovement. We can be on the vanguard of the new millennium, if we embrace this metaphor to guide us. Being in the vanguard is where we need to be, because *the vanguard* is any creative group active in the innovation and application of new concepts and techniques in a given field, including home economics. We can better position ourselves on the vanguard if we embrace the holomovement concept—the idea that the entire whole is in constant movement, folding in and out of itself recreating a central core of sustaining and invigorating professional life energy.

Perhaps our founders tapped into this idea. There is deep meaning in the fact that many home economics associations have the flame as their symbol (most logos designed a century ago). The flame is a powerful representation of the inner energy core of the profession. The flame encompasses all of the metaphors used in this paper: folding and unfolding, the entire whole moving as one, embodied practice, dynamic motion. In order for this flame to continue to burn, it needs to be stoked, and continually watched. If we want to ensure a sustainable, future-proofed profession, we must take care of our flame. We must remain committed to nurturing the deep energy core of our profession. The holomovement principle serves as well in this commitment.

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Biography

Sue L. T. McGregor is a Canadian home economist at Mount Saint Vincent University, Canada. She is a Professor in the Faculty of Education. Her intellectual work pushes the boundaries of consumer studies and home economics philosophy and leadership towards integral, transdisciplinary and moral imperatives. She is Docent in Home Economics at the University of Helsinki, Marjorie Brown Distinguished Professor and a Kappa Omicron Nu Research Fellow. Affiliated with 20 professional journals, she is Associate Editor of three home economics journals. Sue has delivered 35 keynotes and invited talks in 11 countries and published over 120 peer-reviewed publications, 11 book chapters, and eight monographs. She published *Transformative Practice* in 2006. *Consumer Moral Leadership* was released in 2010. With Russ Volckmann, she co-published *Transversity* in 2011. Her professional and scholarly work is available at <http://www.consultmcgregor.com>

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Transdisciplinary Methodology in Home Economics

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Abstract

A transdisciplinary methodology better ensures that home economics can take the lead in ensuring that higher education disciplines (including home economics), government agencies, the corporate sector, and members of civil society can share perspectives and power to solve increasingly complex problems of humanity. To that end, this paper profiles home economics as comprising disciplinary work, interdisciplinary work and transdisciplinary work. It envisions home economics practice through the lens of transdisciplinarity as a methodology, with four axioms: (a) multiple Levels of Reality (ontology), (b) the Logic of the Included Middle, (c) knowledge as emergent complexity (epistemology), and (d) integral values constellation (axiology).

Keywords: transdisciplinarity, interdisciplinarity, methodology, home economics, complex human problems

Home economics is “the only critical, profound, and global profession that addresses the actual spectrum of nurturing basic human universals” (Davis, 1993 p. 32 (see also Davis, 2008)). To live up to the laudable goal of addressing problems of humanity, home economics could consider transitioning from an interdisciplinary to a transdisciplinary approach to practice. The latter involves intellectual, border-crossing work (Horlick-Jones & Sime, 2004) for the good of humanity (Brown, 1993). To facilitate a conversation about what this practice might look like in home economics, this paper shares ideas about transdisciplinarity as a methodology, an idea worth considering for home economics.

For a century, the profession has framed itself as interdisciplinary (Brown, 1993). Interdisciplinarians strive to assemble different disciplines around particular themes without any commitment to change the boundaries and relations among the disciplines (Fairclough, 2005). Home economics excels at this task. However, the unintended results often are fragmented knowledge, insular islands of specialized expertise, and too few connections with other disciplines that also are interested in problems faced by humanity (Brown, 1993; von Schweitzer, 2006). Home economics’ unique contribution is its focus on the home and family. When home economics professionals embrace the idea of crisscrossing back and forth across its disciplinary boundary and those of other disciplines, with the intent of removing the boundaries to create a space for intellectual synergy, they will augment their ability to meaningfully contribute to the solution of the world’s problems.

Acknowledging home economics’ traditional interdisciplinary posture, McGregor (2010b) shared a history of the idea of transdisciplinarity in home economics. She recounted the

leading-edge contributions of Christine Daniels (1980) from Wales and Marjorie Brown (1993) from the United States. Daniels believed that transdisciplinarity was a way to organize home economics curriculum in higher education. Brown believed transdisciplinarity was both (a) an overarching conceptual framework and (b) a context for the unity of world views. She ardently maintained that by using a transdisciplinary framework, interdisciplinarian home economists would be better able to study more relevant social problems than if they remained constricted by their narrow disciplinary boundary and siloed specializations.

Daniels (1980) and Brown (1993) started the profession on its journey towards transdisciplinarity, using then-contemporary understandings of the concept. Daniels relied on Jantsch's (1972a,b) and Brown relied on Kocklemans' (1979) conceptualizations of transdisciplinarity. McGregor (2010b) observed that as the concept of transdisciplinarity evolved during the seventies and eighties so too did home economists' interpretations of transdisciplinary-informed practice. Indeed, Daniels and Brown tendered quite different ideas of what transdisciplinary in home economics might look like. They both provided very valuable insights for the profession, nudging us further away from our historical reliance on interdisciplinarity.

In her discussion of Daniels' (1980) and Brown's (1993) contributions, McGregor (2010b) asserted that, by remaining cognizant of the continually evolving notion of transdisciplinarity, the profession could become a key player in the global movement for integral, boundary-crossing approaches to address the magnitude and complexity of problems faced by humanity. Following in Brown's and Daniels' footsteps, she continues to champion the idea of transdisciplinarity and home economics; however, McGregor draws on new iterations of transdisciplinarity that have evolved since Daniels' and Brown's contributions. In particular, she employs notions of transdisciplinarity as methodology, a perspective that originated at the first world congress on transdisciplinarity (cf. Nicolescu, 2002). This meeting was held in 1994 in Portugal, one year after Brown's work was published and 14 years after Daniels' paper.

For clarification, earlier notions of transdisciplinarity (TD) assumed it was a hyper form of interdisciplinarity (Jantsch, 1972a,b; Kocklemans,1979). New scholars of transdisciplinarity perceive it as more; they envision it as an integrated combination of: (a) disciplinary work, (b) scholarship between and among disciplines (interdisciplinarity), and (c) knowledge generation beyond academic disciplines and across sectors external to the university (at the interface between the academy and civil society) (McGregor & Volckmann, 2010) (see Figure 1). This approach is the focus of this paper.

Home Economics Disciplinary Work

Home economics concurrently evolved as both a discipline and a profession. The former entailed the development of university units, higher education curricula, library holdings, and academic journals and gatherings. Disciplines are understood to be areas of academic study that are comparatively self-contained and isolated domains of learning, which possess their own community of experts (Nissani, 1997). On the other hand, a profession involves a responsibility to serve the public, has a complex, evolving body of knowledge (drawing from disciplinary scholarship), has standards of admission, requires certification or licensing, and

has a need for public confidence (Brown, 1993). Professions require professional associations, accreditation and/or licensing, ongoing professional development and in-servicing, and codes of ethics and practice, even regulatory legislation.

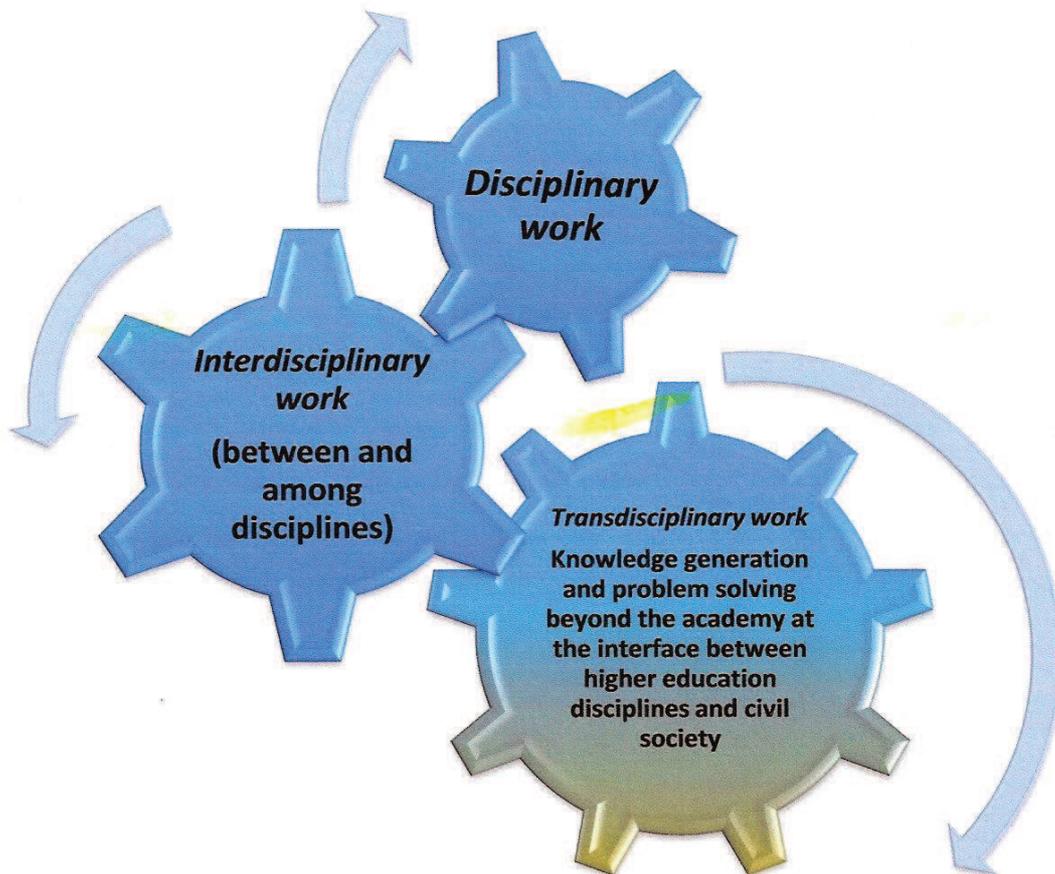


Figure 1 Contemporary notion of transdisciplinarity - integrated combination of three forms of scholarship (work) and problem solving

In more detail, the academic discipline of home economics has created (and continues to create) its own disciplinary knowledge base, to serve both a generalist and a specialist approach. The former prepares mission-oriented professionals to assist families in complex problem solving. It often involves added attention to the stated mission, values and philosophical core of the profession. The specialist approach prepares professionals for specific career paths, with the focus on the mission less clear (Butler, Ade-Ridder, Rudge & Senbach, 1987). Brown (1993) further clarified that a generalist is prepared to integrate knowledge from a variety of disciplines while a specialist studies within existing sub-divisions of an established discipline (in our case, food, clothing, shelter, family, consumption et cetera). Turkki (2006) proposed a new kind of specialization within home economics. We

would become integral specialists with expertise that integrates, links bridges, sees connections, looks for patterns, coordinates and communicates.

As well, within the last decade, some professional associations have focused attention on clarifying the profession's body of knowledge (BOK) (e.g., Nickols et al., 2009). A BOK is a term used to represent the complete set of agreed-to concepts, terms, principles and activities that make up a professional domain, as defined and advocated by the relevant professional association. BOKs contain the main domains of learning and respective high-level topics or knowledge areas, as developed within the academic discipline. Ideally, there is a mutually beneficial relationship between the discipline and the profession (McGregor & MacCleave, 2007), one which ensures productive and meaningful disciplinary work that advances the discipline and serves the profession.

Home Economics Interdisciplinary Work

Brown (1993) clarified that interdisciplinary work involves the integration of knowledge and modes of reasoning and logics from different disciplines into new patterns of thought and practice (taken to mean empirical logic, interpretive logic (meanings) and critical logic (judgements about power infrastructures)). From an interdisciplinary stance, problems faced by individuals and families are perceived and dealt with through inquiry in research and in education over several disciplines (including some combination of the natural, human, social, and administrative sciences). Daniels (1980) and McGregor (2008, 2010c) explained that home economics higher education programs are conventionally structured so that students take courses from other disciplines. Their minds are trained to tease out content, theory and principles from aligned disciplines and then to draw on the synergy created when connections are made between these insights and home economics' mission and philosophy. The intended result is interdisciplinary-informed practice that is focused on individual and family needs and functions.

It bears repeating that, despite this deeply valuable approach to academic socialization into the profession, interdisciplinarians strive to assemble different disciplines around particular themes without any commitment to change the boundaries and relations among the disciplines (Fairclough, 2005) or between the discipline of home economics and other disciplines. In our case, architects of higher education programs design curricula that expose students to an array of disciplines, with the intent to create a home economics-focused disciplinary knowledge base. Over time, this knowledge base emerged as a result of the generation of fresh knowledge produced through the integration of knowledge from a collection of different disciplines (Brown, 1993). Done well, interdisciplinary approaches help home economics students create patterns for interpreting the world through a multitude of disciplinary lens, while remaining focused on family well-being and quality of life.

Brown (1993) and others also characterized home economics as multi-disciplinary. Interdisciplinary work differs from multi-disciplinary studies in that the latter does not strive to integrate knowledge into new patterns. Both approaches are natural first steps for solving complex social problems, but they are not enough (Brown, 1993; Lattanzi, 1998). Human problems do not exist in isolated discipline-oriented packets; hence, solutions to such complex problems cannot be found in disciplinary, even multi- or inter-disciplinary,

approaches. To that end, Brown asked us to use the transdisciplinary framework to re-examine the purpose historically claimed for home economics, both its meaning and its justification.

Home Economics Transdisciplinary Work

Brown (1993) portrayed transdisciplinarity in home economics as an overall framework for the synthesis of knowledge that unites and then transcends the disciplines because it focuses on work done in various fields by people concerned with “the human problem” (p.296). She astutely explained that this knowledge synthesis must take place in the mind of each home economist before a collective synthesis can take place within the discipline. This synthesis cannot occur if each home economist seeks comfort within his or her specialist-trained mind, limiting his or her perspective concerning the human problem. Home economists engaged in this transdisciplinary process would have to move beyond their views of the world informed by their respective discipline (Brown). Even if it is interdisciplinary in its philosophy, home economics is not the only way to see the world.

Transdisciplinarity also significantly deepens the range of problems that home economists would consider. Historically, we have focused on the quality of life and well-being of individuals and families. This characterization of our *raison d’être* fails to “clarify the set of human problems appropriate for home economics” (Brown, 1993, p.255). Transdisciplinarity would have home economists “go to the root of human problems ...rather than to treat the manifest symptoms [thereby] making us more critically reflective about social realities and their influence on the human condition rather than blindly accepting existing social conditions [characterized as well-being and quality of life]...” (p.268, emphasis added). Present day scholars (e.g., Nicolescu, 2001) agree that the set of human problems mentioned by Brown encompasses: the human condition, issues that have global implications, human freedom and justice, self-determinism, harmonious access to and distribution of resources, human and bio sustainability, power relationships, human aggression, human development, human empowerment and potential, and the import of ideologies, worldviews and paradigms. This notion of what constitutes a problem is a far cry from home economics’ conventional rhetoric of specialized issues pertaining to food, clothing, shelter, family relations and individual development, and consumption-related scenarios.

As mentioned before, Sue McGregor is carrying on Christine Daniels’ and Marjorie Brown’s work by continuing to champion transdisciplinarity and home economics. In her paper for KON’s Human Sciences Working Paper Series, McGregor (2004) distinguished transdisciplinarity from other forms of disciplinarity with which home economists are familiar. She then used metaphors to illustrate the mind shift necessary to move home economists from multi- and inter-disciplinarity to transdisciplinarity. She concluded by tendering a transdisciplinary self-orientation tool to help individual practitioners determine their readiness for this new approach to practice. More recently, her writings affirm her belief that transdisciplinarity is a methodology in its own right,¹ akin to empirical, interpretive and critical methodologies (McGregor, 2005, 2007a, 2009a, 2010a; Torkar & McGregor, 2012). This paper now turns to this current approach to transdisciplinarity, and what it might mean for home economics practice.

Transdisciplinarity as a Methodology

Brown (1993) exclaimed that it is not enough for home economists to solve the set of human problems using an integrated package of technical information from several disciplines (the logic of empirical scholarship). Such problems also concern human values (interpretive logic) and the need to judge and critique global resource distribution and resultant power infrastructures (critical logic). She asked us to apply a combination of all three methodologies to solve the problems of humanity - empirical, interpretive and critical. McGregor and Murnane (2010) provided a detailed discussion of how these three methodologies differ.

Contemporary approaches to transdisciplinarity actually conceive it as a fourth methodology in its own right, with its own notions of what counts as knowledge, logic, reality and the role of values (four axioms, with axiom meaning self-evident rules, principles and laws). Nicolescu (2002, 2008b) is the leading advocate of the transdisciplinary (TD) methodology. He tendered three pillars (axioms) of transdisciplinarity: (a) multiple Levels of Reality (ontology), (b) the Logic of the Included Middle, and (c) knowledge as emergent complexity (epistemology). McGregor (2009a) and Cicovacki (2004, 2009) added a fourth pillar of values (axiology), which McGregor labelled integral values constellation (see Figure 2).

Four Pillars (Axioms) of Transdisciplinary Methodology

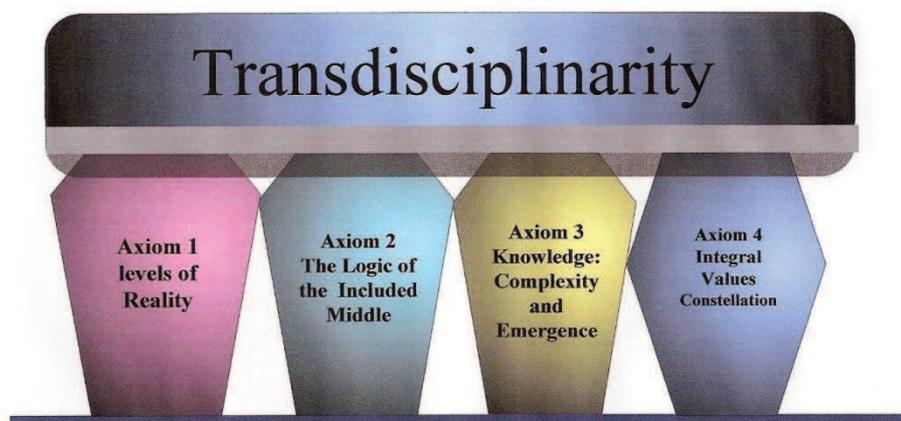


Figure 2 Four pillars (axioms) of transdisciplinary methodology

It is important to note that the current TD methodology is deeply informed by the new sciences of quantum physics, chaos theory and living systems theory (Nicolescu, 2006). By comparison, most home economists have been socialized in higher education programs informed by Newtonian physics. The latter (known as Modern Science) assumes everything is separate, especially that science is separate from theology, philosophy and culture. It embraces fragmentation, dualities (this or that), and universal laws that apply to everything and everyone (with no concern for context). The world is viewed as black and white. The ideology of scientism assumes that only knowledge generated using the scientific method is

worthy knowledge. Objectivity becomes the extreme criterion for Truth and reality. Human beings become objects.

Within this scientific mind set, generations of home economists have become comfortable with being experts, with working within their own discipline, and especially with being specialists within home economics sub-disciplines (hyper-specialization). They have become adept at assuming that their picture of family reality is incomplete, made up of many separate parts. If they can just conduct enough experiments and develop enough theories about this singular reality, they will eventually build up a more complete picture (McGregor, 2009b). Nicolescu (2006) explained that the innovation of the new sciences radically changed what is acceptable as knowledge, reality, logic and the role of values. Home economics now has a methodology that enables it to renounce (at least downplay) scientism, fragmentation and hyper-specialization, a fervent call of Brown (1993). Each of these four pillars of the TD methodology is now discussed.

Transdisciplinary Reality (Ontology)

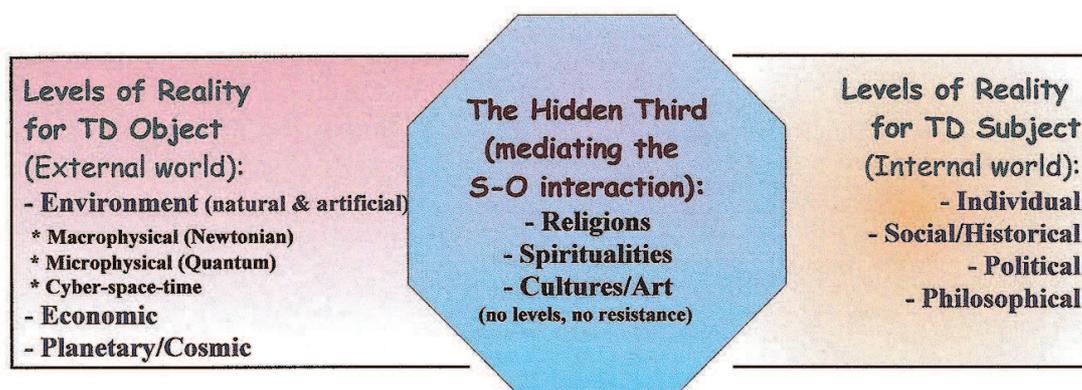
Ontology refers to the study of existence or reality. It deals with questions of what entities exist (or can be said to exist) and of how they can be grouped or sub-divided according to similarities or differences. Instead of one singular reality, transdisciplinarity accommodates 10 key realities (multiple levels of realities): the environments, economics, politics, culture and art, social and historical, individual and community, the planet and the cosmos. Each of these realities is characterized by its incompleteness; yet, together, in unity, these realities generate new, infinite knowledge (Nicolescu, 2006).

Some people are more aware of different levels of reality than are others (i.e., it is their speciality, their expertise, or their lived experience). For this reason, transdisciplinarity assumes that it is essential to seek multiple perspectives on any human problem (or set of human problems) because the intent is to integrate many levels of truth. There is no right or wrong, good or bad, yes or no answer; there is no black and white. Also, no one level of reality constitutes a privileged place from which individuals are able to understand all other levels of reality; instead, a level of reality is what it is because all of the other levels exist at the same time (Nicolescu, 2006).

From a TD perspective, home economists would respect the complex and dynamic relationships between three levels of reality: (a) the internal world of humans (comprising political, social, historical and individual realities); (b) the external world of humans (comprising environmental, economic, and cosmic/planetary realities); and, The Hidden Third. People's experiences, interpretations, descriptions, representations, images, and formulas meet on this third level. Three realities exist in this intuitive zone/level: culture and art, religions, and spiritualities (see Figure 3).

Levels of TD Transreality for Subject and Object, with Hidden, Mediating Zone

(I am grateful to Basarab Nicolescu for his personal contributions to my understanding of this concept)



In summary, the TD methodology assumes there are 10 different realities, organized along three levels. Together, they form TD ontology: the internal world of humans (with its flow of consciousness), the external world (with its flow of information), and their mediated interface (Nicolescu, 2006, 2008b). Home economists would no longer problem-solve from one level of expertise (e.g., just home economics, or just politics or just economics). They would expand their horizons to envision solving the set of human problems by employing a different notion of what counts as reality, and by accepting that these realities are intertwined.

Although this idea may feel similar to human ecology's concept of reciprocal relationships among levels of environments, it is different in that it deals with the mediated flow of inner consciousness (perceptions) and technical information from different realities leading to a meeting of the minds in a Zone of Non-Resistance. In this space, home economists would shed their resistance to truth informed by other realities, and join these realities to generate complex, TD knowledge (see Figure 4).

Transdisciplinary Logic

Transdisciplinarity asserts there are multiple levels of reality and that each level is governed by a different kind of logic (Nicolescu, 2008b). Logic is concerned with the habits of the mind that are acceptable for inference and reasoning when arguing one's position on an issue. In philosophy, logic is concerned with answering the question "How do we know what we know?" Logic (reasoning and inference) is used in most intellectual activity, and perceptions of what counts as logic underpin all intellectual activity. The tendency in higher education is to predicate curriculum on the Newtonian logic of exclusion, on reductionist-based scientific inquiry (Nicolescu, 2008b). The logic of exclusion assumes that the space between objects or people is empty, flat, static and void of life (like the space between the balls on a billiard table). In academic life (and home economics is no exception), this logic manifests as

separate departments, journals, library holdings, conferences and professional associations. It is also evident in the familiar intellectual actions of: deduction (cause and effect), linear thinking, reductionism (breaking things down into parts to understand the whole from which they come), and either/or approaches with no room for contradictions.

Coherence - Need breakthrough (shared zone of non-resistance) to create new TD knowledge:
 Subject is able to communicate with Object (different disciplines can talk to each other!)

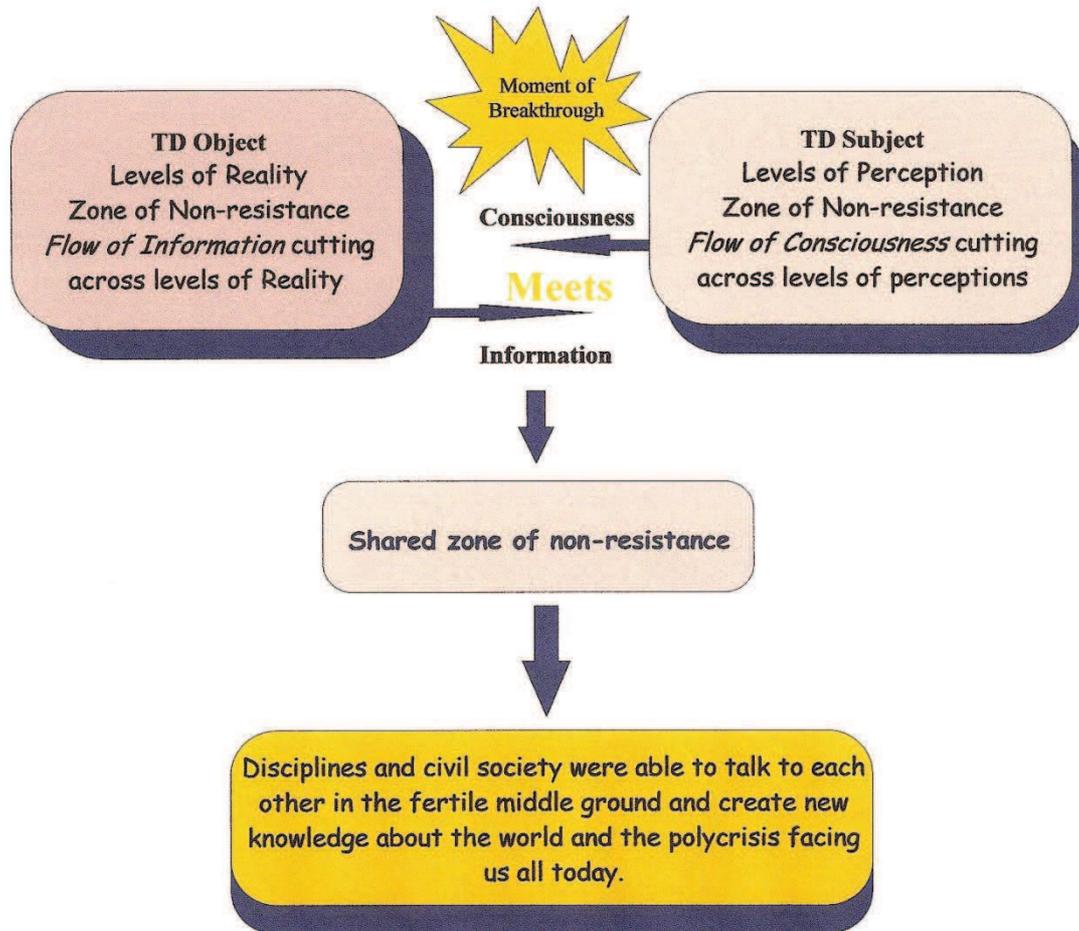


Figure 4 Transdisciplinary zone of non-resistance where actors can talk with each other

Home economists often employ the logic of exclusion, even though they characterize themselves as interdisciplinary. Interdisciplinarity builds bridges between disciplines so ideas can cross back and forth across temporary, coordinated borders. The assumption is that a bridge is needed to cross the deep chasm between siloed, fragmented fields of study and between hyper-specialized sub-disciplines within home economics (McGregor, 2004, 2006). In practice, the lack of a temporary bridge means there are many instances when people from different disciplines (even within the (sub)discipline(s) of home economics) cannot talk to

each other; hence, there can be no integration or generation of new knowledge (MacCleave, 2006).

In contrast to a logic of exclusion, a TD methodology embraces the Logic of the Included Middle. This inclusive logic enables people to imagine that the space between things is alive, dynamic, in flux, moving and perpetually changing. It is in this fertile middle space that transdisciplinary manifests itself. Transdisciplinarity has people stepping through the zones of non-resistance (away from one worldview or notion of reality towards others) onto a fertile, moving floor of the included middle, where, together, they generate new transdisciplinary intelligence and knowledge. The logic of the included middle would require home economists to create a space for dialogue and knowledge generation. In this space, attempts would be made to reconcile different logics for the sake of solving the set of human problems. Using the logic of the included middle to move through the 10 different types of reality (by making space for contradictions and discontinuities in realities), creates a permanent possibility for the evolution of new knowledge.

In more detail, quantum physics allows people to imagine many fuzzy-edged balls of knowledge and ways of knowing coming together. When all of these people and their ideas collide on the fluxing, fertile space, fusion occurs when separate bits of knowledge come together. These knowledge and perception/consciousness bits move faster when they are exposed to each other (McGregor, 2004). TD knowledge is created. The logic of the included middle allows people to bridge adjacent levels of reality, enabling meaning-making systems to orient themselves to each other (Nicolescu, 2008b). When people from different disciplines come in contact with each other and are motivated, an energizing force is generated - a synergy is created. This synergy leads to the generation of embodied knowledge created from the energy emanating from the intellectual fusion. McGregor (2009a) employed a metaphor of a lava lamp to explain this idea. As well, a sense of community and belonging is nurtured - a sense that individuals are part of something bigger than each of them. At the same time, there is a realization that everyone is a new and different person in each relationship(s) formed in the fertile middle. The strength and potentialities that emerge from these intellectual encounters are life-giving and transformative.

What is especially significant about the logic of the included middle is transdisciplinarity's focus on what happens at the interface between higher education (academic disciplines) and the rest of the world. In order for home economics scholars to become transdisciplinary, they would have to connect with members of civil society (as well as with the private and public sectors). Civil society refers to all groups outside government and the corporate sector (including the academy) such as: community groups, non-governmental organizations, labour unions, Indigenous Peoples' organizations, women's groups, charitable organizations, faith-based organizations, professional associations, foundations, and citizens (FAO, 2008). While *inter* means between, *trans* means to crisscross back and forth, to zigzag, to move beyond, to move through, to pass beyond the limits. By definition, this means home economists would reach beyond the walls of their academic discipline and sub-discipline(s) into the world of lived human experiences, interacting with actors from other sectors (McGregor, 2004, 2006).

Furthermore, a TD methodology would ask home economists to accept that what counts as knowledge has to expand beyond that which is generated using the scientific method to include the complex structure of understandings garnered through intricate webs of relations among individuals in the academy, the private and public sectors, and in civil society. Horlick-Jones and Sime (2004) coined the phrase border-work to refer to the intellectual work that occurs when people living on the borders of the academy (university disciplines) and civil society engage in knowledge generation to address complex problem solving.

Transdisciplinary Knowledge (Epistemology)

The third axiom is TD knowledge. Epistemology stems from the Greek word, *epistēmē*, meaning knowledge. It is a branch of philosophy concerned with what is knowledge, how is it acquired, what do people know and how do they come to know it. As with ontology and logic, transdisciplinarity strives for a different kind of epistemology than do the other three methodologies (see McGregor and Murnane, 2010). Transdisciplinary knowledge is based on cross-fertilization, embodiment, complexity and emergence.

A different understanding of these familiar words is required of home economists, especially complexity (versus complicated) and emergence. Transdisciplinarity draws its notion of complexity from the new sciences. From this perspective, there is a difference between a complicated problem and a complex problem. Although complicated and complex have the same root, they do not mean the same thing in a TD methodology. A complicated problem is characterized as hard to solve because it is intricate, tangled, knotty and detailed. It is one thing to untangle the strings of a complicated problem but quite another to re-weave them, along with new strings, into a new whole. The latter process is an inherent part of solving a complex problem because it features the concept of emergence.

McGregor (2010a,d, in press) provided an in-depth discussion of the TD concepts of complexity and emergence. Succinctly, transdisciplinarity holds that the process of emergence comes into being as people pass through the zone of non-resistance (accept that there are many realities) and enter the fertile middle ground to problem solve using the logic of inclusion. Emergence refers to novel qualities, properties, patterns and structures that appear from relatively simple interactions among people, qualities that did not exist when presented in isolation. These new qualities are layered in arrangements of increased complexity (Morin, 2005; Nicolescu, 2008a). Emergence means home economists would assume that the problem(s) they are addressing continually changes as people try to jointly solve it. The problem (for example, poverty) is a rich weave of societal structures and functions. This new weave of poverty (and people's understandings of poverty) keeps changing because new and coherent structures, patterns and properties emerge as a result of the interactions among people trying to address poverty while working within a web of changing relationships (on the included middle ground). Original perceptions of poverty are left behind or transformed as new understandings of the problem take shape and as the synergistic energy is generated during the intellectual border-work (McGregor, 2009a).

TD knowing assumes that everything is interconnected and interrelated in the world, which is far from being consistent and predictable. To that end, transdisciplinarity tries to understand the complex problems of the world (the big issues with global implications) rather than the

problems inside specific disciplines and sub-disciplines. To achieve this complex knowing, a new kind of knowledge is required, called TD knowledge. TD knowledge is created in the fertile middle ground, emerging from gradual cross-fertilization. The latter results from the iterant convergence of different actors and their fuzzy-edged balls of knowing, shaped by their respective expertise or disciplinary axiomatic (Nicolescu, 1997). The creation of TD knowledge depends on negative (maintain the status quo) and positive (deviate from the path) feedback to self-generate. Increasing deviation allows for transformation; hence, TD's notion of complexity implies that home economists would pair unlike ideas to generate intellectual deviations (Morin, 2005).

Nicolescu (1997) further suggested that generating TD knowledge requires people to become an apprentice of creativity, and to respect open unity and complex plurality. People have to figure out how they have been conditioned to learn, and they have to become comfortable with testing the foundations of their convictions. Also, TD knowledge emerges through the process of integration, understood to mean opening things up to all disciplines and to civil society-knowing so that something new can be created via synthesis and the harmonization of ideas and perspectives (different realities).

Cicovacki (2009) pointed out that theories of truth and knowing from the other methodologies are one-sided and inadequate for dealing with today's set of human problems. It is not that they completely miss the nature of truth and knowledge; rather, they capture only a few relevant aspects and disregard others. To address this issue, the TD methodology assumes that everything is complexus - woven into a web, where the focus is on the relationships (links) among things instead of on the things that are linked. The resultant knowledge that is created when higher education meets civil society is alive because the set of problems the knowledge addresses is alive, emerging from the life world (McGregor 2009b). When people accept the world and everything in it as dynamic, evolving and always in-formation, their knowledge, explanations and definitions gain nonpermanent status. TD knowledge is vibrant, alive and used in common rather than stagnant, hoarded and copyright protected (McGregor, 2004, 2006).

Finally, discussed in limited detail in this paper (see elsewhere in McGregor, 2010d), home economists also would come to welcome chaos, uncertainty, and tension, along with emergence and complexity. They would know that TD intellectual border work is going to lead to personal and disciplinary growth and evolution. Change creates chaos (a lack of regular, predictable arrangements, as defined by the new sciences). Home economists would learn to self-organize (reorganize) as they accept chaos and seek solutions to the apparent lack of order (the problems of humanity). This reorganization would lead to renewal (Wheatley, 1999). Home economists would not try to maintain the old order but would enter into trustful, sharing relationships with others who have the same vision and relevant information. Together, they would create a new world and generate creative solutions to complex, emergent human problems. Through rich processes and exchanges, multiple minds would interact and produce a complex knowledge containing its own reflexivity. This knowledge creation process is rich with value orientations.

Transdisciplinary Values (Axiology)

The final TD axiom deals with values. By its very nature, transdisciplinary dialogue will witness the inescapable value loading of every inference, every opinion; every line of conversation will face a potential clash of values, ethics and morals. The transdisciplinary methodology is very politicized, hence value laden. The fourth pillar of the TD methodology is thus concerned with axiology, the role of values and the researcher/change agent in the knowledge creation and problem solving process (Cicovacki, 2009; McGregor, 2009a).

The science of inquiry into human values (axiology) enables people to identify the internal valuing systems that influence their perceptions, decisions and actions (Schoof, 2009). Within transdisciplinary complex problem solving, thinking and action are intricately bound, necessitating a key focus on values. Indeed, Bazewicz (2000) affirmed that transdisciplinarity holds a holistic vision of the world, and is concerned with the local and global integration of values. Cicovacki (2009) argued that TD practitioners need to be able to deal with values and their systematic examination, even to develop a map of values. This values map would serve as a coordination system for the TD map of multiple realities that people are trying to assemble and navigate.

Working together in fluctuating, enriching and challenging relationships necessitates a concern for values, especially because complexity infers the need for more than a single expert's solution. In order to develop the necessary tolerance of different viewpoints, so people can stay engaged in conversations about the complex problems shaping the human condition, home economists would respect the role of axiology in transdisciplinarity. Küpers (2009) asserted that changes in value mixes are a key part of the rapidly changing global village, and that profound changes are taking place at all levels. He agreed with vanBreda (2007), that values often are the missing link in providing strategic solutions to key, global issues, which are informed by a collage of differing worldviews held by individuals, cultures, nations and regional and international groups. Transdisciplinarity needs value-steered processes to lead to multiple truths; its attendant TD knowledge production depends upon it (Burger, 2003).

Integral values constellations (Axiom 4) play a key role in successfully implementing the transdisciplinary methodology in home economics practice. The solutions for complex, emergent problems require partnerships with, and the knowledge of, experts from different scientific disciplines, from the private and public sector and from civil society. The capacity to solve complex problems is generated through these relationships, which are predicated on the generation and allocation of power, which is energy. This compilation and integration of different world views and value orientations may cause conflicts, which can result in power struggles. Whether or not the power (the energy force) generated when people work together to solve complex and emergent human problems is negative or positive depends upon the nature of the relationship(s). And, with power comes responsibility. Embracing this TD responsibility can be a challenge unless the constellation of values at play is respected, managed and lead.

Summary and Emergent Conclusions

In summary, if they employed a transdisciplinary methodology, home economists (a) would crisscross disciplinary and sub-disciplinary boundaries with the intent to change (or remove) the borders while integrating theories, policies and practices emanating from this disciplinary migration and integration. (b) They would recognize that leadership for home, families and humanity happens in the fertile middle ground within the academy and among higher education, civil society and other sectors. This integral leadership is informed by the logic of inclusion and multiple levels of reality. (c) Home economists would appreciate that TD knowledge is complex, emergent and embodied. They would find new respect for tension, chaos and disorder, (d) especially as they managed the value-laden transdisciplinary dialogue inherent in intellectual fusion. And, (e) they would integrate many realms of reality (multiple perspectives and logics) as they worked with other disciplines and members of civil society in intellectual border-work to address the context of 21st century humanity.

A transdisciplinary methodology better ensures that each of higher education, government agencies, the corporate sector, and members of civil society can strive to share their perspectives and power to solve increasingly complex problems of humanity. Home economics can assume a leading role in this process. Daniels (1980) and Brown (1993) started the profession on its journey towards transdisciplinarity, drawing on then-contemporary iterations of TD. This paper shared a third version of transdisciplinarity, informed by Basarab Nicolescu's conceptualizations of TD as a methodology in its own right. It explained how the current generation of TD might reshape home economics if members of the profession shifted paradigms. This shift would enable them to appreciate the merit of respecting TD as a fourth methodology, augmenting the familiar empirical, interpretive and critical methodologies.

This paper intentionally makes a strong value statement about the discipline and the profession. Brown (1993) claimed that home economists need to rationally examine any statements about what home economics can and should be, else we will lack the conviction and the will to act upon them. Believing that home economics should become convinced of the merit of acting on the TD methodology, this paper aimed to illustrate how transdisciplinarity can be a powerful way to reframe home economics. It could become a discipline that engages in disciplinary work, interdisciplinary work, and knowledge generation and problem solving at the interface between higher education and civil society - transdisciplinary work (see Figure 1). This transdisciplinary work would lead to a different, higher plane of inquiry involving the co-invention of new TD knowledge at the interface of disciplines, civil society and other sectors, and do so through joint problem solving, reorientation, perspective shifting, and value integration.

The TD methodology, with its focus on integral, complex and emergent problem solving, seems a natural fit with home economics' deep core. Home economics is a science of human life and existence, shaped by life within the home (Fusa, 2004). East (1979) asserted that home economics is a focus on the home in order to improve humanity. If we accept her insight into home economics' *raison d'être*, we will need a new methodology with which to solve the set of human problems appropriate for home economics' focus and attention. In our contemporary times, that methodology is called transdisciplinarity.

Biography

Sue L. T. McGregor is a Canadian home economist at Mount Saint Vincent University, Canada. She is a Professor in the Faculty of Education. Her intellectual work pushes the boundaries of consumer studies and home economics philosophy and leadership towards integral, transdisciplinary and moral imperatives. She is Docent in Home Economics at the University of Helsinki, Marjorie Brown Distinguished Professor and a Kappa Omicron Nu Research Fellow. Affiliated with 20 professional journals, she is Associate Editor of three home economics journals. Sue has delivered 35 keynotes and invited talks in 11 countries and published over 120 peer-reviewed publications, 11 book chapters, and eight monographs. She published *Transformative Practice* in 2006. *Consumer Moral Leadership* was released in 2010. With Russ Volckmann, she co-published *Transversity* in 2011. Her professional and scholarly work is available at <http://www.consultmcgregor.com>

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