

Seeking Control in a Precarious Environment: Sustainable Practices as an Adaptive Strategy to Living under Uncertainty

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Abstract: In this paper we will argue that the transition to sustainable behaviours is part of a wider cultural adaptation to the new uncertain and precarious conditions of contemporary living. The analysis of a growing innovation space which is at the crossroads of digital transformation and ecological transition, shows that the digital culture of sustainability goes hand in hand with the changing practices emerging from an increasing economic and professional precariousness. We discuss the data emerging from a citizen science platform, called If You Want To or IYWTo to create a global repository of digital solutions for low emission mobility, renewable energy use, food system innovation, circular economy, green finance, activism and education.

Keywords: sustainable lifestyles; digital green services; innovation; citizen science; behavioural change; precariousness

1. Introduction

A common argument in the field of sustainability is that awareness of climate change is not enough to trigger significant lifestyle modifications [1-3]. Studies in Europe and the US (Ref. [4] for Switzerland, Ref. [5] for Finland, Ref. [6] for the US) show for instance that even with high rates of climate change awareness and concern, the only behavioural transformations that are systematically reported regard recycling and energy efficiency [7]. A common explanation is that people modify “low cost” practices such as organising waste, but are less willing to change behaviours that add a burden of time or effort to their lives such as changing their modes of commuting, heating or travel [8]. Simpler actions such as choosing energy saving appliances satisfy the moral imperative of contributing to the reduction of carbon emissions without disrupting fundamental patterns and habits of living [9]. The starting point for most of this research however, is the idea that people perceive themselves as living in stable situations and that they fear destabilising the existing equilibrium. Within this framework, the objective therefore is to understand the mechanisms, be they psychological, social or economic, that will trigger and sustain behavioural change in a positive direction. Policies, group pressure, nudging, education, regulations are all instruments envisaged to help people transition from their current lifestyle to a new equilibrium characterised by a more sustainable set of practices.

There is a growing body of sociological and anthropological literature that describes the social situation following the globalisation process started in the 90s, as one of perceived precariousness and not stability. Recent forms of modernity are being characterised by an increasing sense of risk and unpredictability [10-12], greater mobility [13] and uncertainty [14,15]. Concretely this means that in Europe, young people in particular, have discontinuous periods of employment and irregular incomes [16], alternate periods of employment and self employment have non linear careers, fewer safety nets from the welfare state, are less likely to be able to purchase a house, are less likely to accumulate some capital, etc. In order to cope with these discontinuities in life patterns, we are witnessing the emergence of new forms of distribution of risk. Young people live longer with parents [17], live in hostels, share houses and workplaces, work from home, own less goods and create strong personal networks of support. All these phenomena can be read either as forms of economic deprivation or as ways to reconfigure the social space in order to socially distribute the new economic and professional demands [18]. More recently, as people become more aware of climate change, it is not only the professional and economic worlds that are considered unstable and unpredictable.

Increasingly even the natural world is perceived as changing along lines that are impossible to anticipate. Politically, the effect of a sense of precariousness have been invoked to explain new form of populism and disengagement from the public sphere [19,20].

However, another characteristic of the current domain of experience is the fact of belonging to a digitally enabled networked public [21]. The extensive use people across generations have had of the web and online social networking services, has laid the ground for new forms of networked collaboration that will be far more complex than those we have seen until now [22,23]. Increasingly, we can see people relying on digitally enabled services and collaborating with diverse, distant and occasional contacts to carry out a growing range of activities such as sharing knowledge and experiences or exchanging goods [24].

The argument we would like to make in this paper, is that if we accept that precariousness rather than stability and continuity are the defining state of people who are considering how to reduce their environmental footprint, our outlook on sustainable transition may be very different. Rather than having to discover how people and social groups can be encouraged or coerced into exiting from their current stable behaviours, we can look at the role sustainable practices play in supporting a lifestyle that is already more fluid. Many sustainable practices such as car sharing, cycling, or reducing consumption, are already compatible with lifestyles where the lack of a predictable and continuous income makes it impossible and undesirable to commit to long term loans and recurring expenses. Owning a car, having a mortgage, are only possible with a continuing stable income. Flexible, shared, on demand, services that take advantage of the distributed nature of the web, are a solution to discontinuous and unpredictable conditions and the rapid success of some of the better known sharing services such as Airbnb, Uber, or Blablacar have extensively proven it [25-27]. But sustainable lifestyles are predicated on more than just flexibility, they tend to modify the patterns of consumption putting people in much more active roles. Goods are bought but also sold, rented, shared, refurbished. Food is eaten but also grown, analysed, shared. Energy is consumed but can also be produced [28,29]. In this fluid society, people move in and out of different roles as consumers, producers, investors, recipients and givers. This multiplicity of roles that can coexist in the same person or household, corresponds exactly to experiences of a generation which weaves in and out of different professional and living situations. Sustainable practices therefore are often perceived as a source of empowerment and control because they offer a coherent response to concerns about health, cost, use of resources and environment and they do so from a vanguard point of increased agency [30].

There is a field of innovation that has recently emerged, that strives to provide the means, tools and products to be an active participant in a sustainable economy [31-33]. All over the world we see cropping up sustainable services in the areas of soft mobility, renewable energy production, food system, natural and recycled materials, green fashion or energy efficient housing which rely on the internet as an infrastructure that allows to reconfigure the cycle of production, distribution, ownership and disposal of goods [34,35]. These innovations espouse the open, distributed, connected, nature of the web as a way to dis-intermediate the relation between producer and customer, to create new networks of exchange and knowledge, or to blur the boundaries between producers and users [36].

As a space of innovation, it represents a radical departure from dominant and traditional approaches to sustainable behavioural change grounded in education and regulation. It freely mixes modes of engagement, using communication, commerce, knowledge dissemination, production, co-ordination, etc. It lowers the barriers to innovation, supporting the exploration of new ideas of change and the development of products at significantly lower costs [37]. It harness openness and collaboration, making new propositions part of a public innovation discourse that generates new opportunities for exploration, change and innovation. At the same time, and from the perspective of culture, this innovation space creates a rich and dynamic imaginary of an alternative, sustainable way of living and a complete toolset of sustainable solutions that anyone can explore and play around with. Behavioural change therefore, is driven by action through the exploration of new practices, emulation of observed behaviours and construction of new tools all happening within a social arena characterized by intense communication, sharing and collaboration.

2. Methods

Mapping the Emerging World of Green Start-Ups

Where digital and ecology meet, we find a very active community of innovators building a large set of native (apps) and browser-based (web sites) software applications that create new opportunities to learn,

make, exchange and take part in collective action. As a relatively recent, and still poorly documented, domain of innovation, our first task was to gather a unique corpus of data. Building on existing taxonomies [38,39], we developed a database and a set of collaborative research tools on a dedicated software platform, called If You Want to (iywto.com).

To populate the database, we adopted a citizen science approach and partnered with volunteers to find and collect cases, refine the data collection criteria, improve the data base structure and help us to set the research priorities. Thanks to their contribution, we have been able to gather information on a much larger scale than initially predicted. The core group of volunteers was formed by experts from the Cleanweb Meetup in London, who were subsequently joined by other activists who started spotting and adding projects, ratings and reviews.

To make the process of contributing to the platform as open and simple as possible, we developed a dedicated suite of web tools. New projects can be added to the database directly from If You Want To landing page by copy-pasting the url of the project page. The only identification requested is an email address, so that the contribution can be acknowledged. Regular contributors can also use a browser extension, downloaded from the If You Want To web site and installed on Chrome and Firefox browsers. Once installed, one click on a relevant project will automatically create a new entry in the directory with the project url. The database itself is editable, so that a description of the project and geolocation information can be provided. Finally, for each project, contributors can create a detailed page, rate and write a review. Collectively, we have gathered over 6000 projects available across multiple geographies. We have analysed and documented in detail over 1000 projects with longer presentations, pictures and videos. These presentations and the database are open and fully searchable and we are finding that the IYWTo platform is accessed by approximately 1000 users a month.

3. Results

Since the public launch of the IYWTo platform in April 2016, we collected over 6000 projects. Most of the products, services and organisations are quite specific in their goals. While they all share an overall objective of contributing to solving the climate crisis, they inscribe their projects in particular areas of intervention such as the transformation of the modes of soil exploitation or the adoption of renewable energy systems, or the reduction of emissions from transport, etc. Each project can therefore be positioned within one domain of socio-ecological transition [40–42]:

1. shifting from producing and consuming electricity and heating generated with fossil fuel to renewable sources of energy
2. moving from growing and eating industrial food to organic, local food systems
3. relying on combustion engine transport to zero or low emission types of mobility
4. moving from a take, make, dispose culture of production and consumption to a culture of making, repairing, reusing and recycling
5. converting to a green ethical finance that looks beyond financial performance into corporations' environmental, social and governance responsibility
6. enabling conscious consumption choices with products made to have the lowest possible impact on the environment and the best possible impact on society
7. supporting the shift to an proactive attitude towards climate change, environmental degradation, social inequality expressed through participation in campaigns to respond to climate crisis, social injustice and in actions for environmental preservation and regeneration.

Each project mobilises their public in its own way. The complexity and sheer size of many of the societal transformations needed to transition to lower impact lifestyles, means that there are multiple routes and components to support the change. For instance, energy transition can be approached by becoming a producer of renewable energy using rooftop solar panels; by switching, as a consumer, to a renewable energy supplier; by buying energy efficient devices, like LED bulbs or software systems to manage and optimize energy consumption, etc. Furthermore, there can be multiple instances of services that have been developed in different geographical regions or as alternative solutions by different types of organisations as a function of their specific objectives, mission and governance. We therefore added a second dimension to our project classification in terms of the mode of engagement with the socio-ecological transition it affords:

1. consumption, meaning the purchase and use of new, second-hand or refurbished products and the subscription and access to utilities and services, that include rental, exchange, sharing of goods and information
2. production, meaning the action of making goods and delivering services independently
3. prosumption, meaning the direct exchange of goods and services between individuals through peer-to-peer platforms that bring together communities of people who buy, sell and exchange goods and services without the intermediation of traditional commercial structures
4. activism, meaning the contribution to collective campaigns to address social and environmental issues and take practical and political action to improve the state of the world
5. learning, meaning the process of acquiring a better knowledge of the climate crisis, its causes and the ways to mitigate and adapt to it

We have summarised the data from the analysis of the last 2000 entries in the IYWTo database of services, in Table 1 showing the frequencies for the 7 socio-ecological transitions and the frequencies for the 5 modes of engagement.

Table 1. Number of services and projects in Transition and Activity categories.

	Making Recycling Repairing	Ecology and Climate Action	Energy Transition	Sustainable Food	Green Finance	Low Impact Products	Low Emission Mobility	Total
Activism	39	112	16	57	8	36	9	284
Consumption	14	16	63	246	59	551	147	1087
Learning	14	62	28	83	13	105	33	340
Production	46	21	45	58		18		186
Prosumptio	37		15		12	15	22	103
Total	153	211	167	443	93	722	211	2000

3.1. Analysis

3.1.1. Consumption

More than 50% of the services in the database are of a transactional nature meaning that they are designed to allow users to purchase, rent or exchange goods and services. What this data suggests is that the bulk of innovation is embedding sustainability in economic processes. In this space we have definitely moved away from traditional environmentalist movements engaged primarily in awareness raising and policy making with a view on reducing consumption [43]. Producing and selling compostable cups is as much part of the fight against single use plastics than campaigning to bring back water fountains in cities. These services transform the consumption patterns of their customers but also the production processes and therefore participate in a given transition by modifying both the material culture [44] and the business culture. In a field where the strongest impact is determined by the excessive consumption and waste of resources any modification of these processes in the direction of greater environmental and social sustainability, are profoundly transformative. They do so however recognising that consumption is a cultural process and that attempts to simply curb it fail to recognise its social significance [45]. The most powerful innovations come from transforming the processes, materials and cycles in a sustainable direction. Consumption therefore spans across the transitions in food, systems mobility, energy and goods with services covering the full range of daily needs.

3.1.2. Learning

The services that are focused on learning are characterised by two very different types of projects: those that show and explain how to do things such as cooking vegan, growing vegetables or building solar installations, and those that offer access to climate and environmental data. The latter usually created by large organisations and scientific institutes share data that is difficult to obtain on more traditional media. The former continue a longstanding tradition of the web to empower users to make, repair and produce autonomously. Transferring knowledge, raising awareness, sharing data are all functions of digital media that are associated with environmentalism and civic participation. Here we find also the instructional and editorial material that are typical of blogs, online social media and reviews. Learning is completely transversal to all the transitions and represents 17% of the services of the sample we analysed.

3.1.3. Activism

Many organisations aim to engage users in campaigns for preserving or regenerating the environment, and are run by well established global organisations. The internet allows very local initiatives to also have a presence. These organisations sit on a long tradition of green and civic engagement and are the “public” face of the innovation space we are describing. They tend to follow the structure of most digital systems of participation: allow users to “acquire and process information relevant to formulating opinions about civic matters, to voice and debate opinions and beliefs related to civic life within communities or publics, and to take action in concert and/or tension with social institutions such as political parties, government, corporations, or community groups” [46]. There are also other forms of activism that are related to novel forms of participation as a community, for instance to produce community energy, to run community gardens, repair workshops etc.

3.1.4. Production and Prosumption

Production and prosumption [47] services put users in the position to be economic actors producing autonomously some of the goods and services needed in daily life such as energy and food, or renting and sharing some of their assets. Platforms for helping people produce, distribute, sell or buy everything from energy to clothes, agricultural produce or beauty products are designed to put users in the dual role of producer and consumer. These innovative services recognise that, increasingly, people are switching between the role of consumer, producer and retailer. Nearly 300 services are using the internet to put people in a position to actively participate in an economic process of reuse, production, recover. In a period of considerable precariousness the possibility of becoming an economic actor is very significant. The projects here are only in part what we would qualify as sharing economy; in many cases they offer solutions on how to

enter a network where production, consumption and retail are combined. Some of the best cases will be illustrated below in regards to energy.

4. Case Studies of Sustainable Innovation That Meets Precarious Lifestyles

A more detailed analysis of some services in different domains tend to show common patterns that go beyond the goal of reducing emissions and human impact on the environment. Most services and projects are based on principles of co-production, suggest a transition towards use rather than ownership, make an intense use of horizontal networks, empower users with knowledge and tools, and often blur the roles between producer and consumer. In the domain of energy and food there is a definite strand of innovation to transform consumers in producers. In mobility most projects are attempting to reduce car ownership and support soft forms of mobility. Household goods, fashion and apparel see innovation in various forms of circular economy to prolong the lifecycle of goods or make use of recycled materials. The movement towards waste reduction is often accompanied by a valorisation of waste. All of these approaches are in our view predicated on cultural models that redefines people's relation with the production, use and disposal of the items and services that they engage with. More importantly they also redefine their roles and tend to include them as active rather than passive participants of these cycles.

4.1. Innovation for Energy Transition: Rooftop Solar, Community Energy, Smart Grids

The big driver of innovation in the energy space is empowerment, or how to create the conditions for households, farms, businesses, organisations, communities to generate their own renewable energy. Some innovations are very much about technology solutions but most are integrated with new ways of becoming autonomous from centralised utilities. In the database we find micro-charging stations for electronics using solar (*yolk* and *sunslice solar*), hydro power (*Enomad*) and wind (*Waterlily Turbine*); and solar-powered lighting (*awango*, *Mpowered*). New ways of generating solar power using roofing tiles (*strauss energy*), smart blinds (*solar gaps*) and all-in-one installations (*smart flower*, *etree*). Somewhat larger installations to generate biogas from food waste for heating and electricity (*homebiogas*, *Brood Nodig*), alternative geothermal heating and air conditioning solutions (*Dandelion Energy*) as well as heating solutions using server farms (*nerdalize*). There are new batteries and systems to store solar energy in the home such as *moixa* and *power vault*, and small appliances that run or capture solar power such as the backpacks with integrated solar panels *voltaic*.

The second main driver of innovation is business models: or how to finance new renewable energy installations, and specifically rooftop solar systems. The solutions proposed range from leasing of solar panels to third parties (*the sun exchange*) to micro-payment loans, like *m-kopa* and *fenix*, to contracts where part of the energy produced is sold back to the grid (*reposit power*). In these cases, we see complex networks of relationships emerging around energy producers, connecting them with energy utilities, financial institutions and energy consumers that can lower the initial solar investment and even transform it in an additional source of revenue.

4.2. Innovation in Transport Services: Driving Cars and Riding Bicycles

This is the domain in which innovative services are particularly integrated with digital technology but also where we see a high integration with approaches to mobility that are more flexible, opportunistic and less dependent on ownership. Innovations puts forward a number of alternative, low-emission modes of transport, as well as solutions to reduce emissions with existing modes of transport. Digital systems are the centre of new networks connecting drivers, passengers, cars, bicycles and service providers, through identity, reputation, geolocalisation and payment systems.

Bike, scooter, car sharing and different forms of ride sharing have become an integral part of the contemporary urban landscape and play an essential role in the transition from owning to using cars. At the same time, they create opportunities to lower transport costs and open new sources of revenue generation through rental of one's vehicle on peer-to-peer platforms (*go more*) or picking up passengers for short (*wayzup*) and long distances (*blablacar*). Apart from the global success of bike sharing schemes and evolved from traditional bikes to electric bikes and from docking station based to more flexible stationless schemes, we have encountered new bicycle-as-a-service propositions (like *swapfiets*) and a new generation of artisan bike makers connecting to their market directly with the web, and building bikes using natural materials, like bamboo (like *Ghana Bamboo Bikes Initiative*) or wood (like *Renovo*), saved materials (like *Roetz*), or cargo

bikes of any form and size (like *portal bikes*). We have come across many new forms of bicycle servicing: from on-demand, on-site repairs and maintenance (like *ridy*, *nipnip*), to community workshops that provide jobs for people who have been unemployed for a long time (*radhof*).

4.3. Innovation in Recycling, Making, Repairing

Another strand of innovation revolves around recycling and upcycling materials. This is a transversal trend which touches clothing, building material, food, electronics, bicycles as we saw above, etc. The principles are always very similar in the sense that the services attempt to extend the life of goods and materials and reduce waste. It is done by repairing, exchanging, donating, putting goods in common, using discarded materials to create something new or simply transforming largely available waste into components of other products. This area really is at the crossroads of sustainability and precariousness as it transforms ownership into use, it empowers citizens to participate in the production and maintenance of the goods they use, and in many cases allows financial gains and savings.

The network of *Repair Cafés* where workshops are regularly carried out to repair electronics, toys and household items has extended all over the world and now count 1300 outlets.

In fashion there are hundreds of new startups that use the web to distribute jeans, eyewear, bags, swimwear, shoes all made using recycled materials. *Re/Done* makes jeans from vintage Levi's denim. *Biloum* creates bags and accessories from banners, airbags and boat sails. *Uptitude* makes glasses from old skis and snowboards. *Indosloes* shoes use soles made of repurposed tires. *Davyi* makes swimwear with 100% regenerated nylon yarn from waste including spent and ghost fishing nets. These are cases where an innovative use of materials can bring to the creation of new businesses.

Always in fashion there are platforms to buy and sell second hand clothes and accessories. To mention a few of the better known ones: *depop*, *vestiare collectif*. There are more and more services attempting to shift consumers from owning to using clothes by putting together large garment collections to buy or rent. Two examples is the Chinese company *Duolayimeng*, which has a collection of 500,000 garments to rent; another is *Hylla* that offers a large collection of vintage clothes.

In building and construction of homes there are a number of platforms to find or make available salvaged or surplus building materials, like *Loop* or *Recipro* in the UK. There are organisations that collect and pay for used plastic to make into construction material. *The plastic bank* rewards people who collect plastic in vulnerable communities. Plastic waste collected is payed for and is then recycled. Similarly *Wastedlab* in the Netherlands rewards people who bring waste materials with discounts in local shops and cafés.

In food systems there are many projects aimed at reducing food waste along the value chain. In the *iywto* database, we find projects designed to bring back into the market fruits and vegetables discarded because of non-standard shape, form, colour or size as juices and snacks (*imperfect fruit*, *snact*). But also projects focused on making sure that surplus and soon to expire foods is redistributed within the local community and among food banks to reach fragile people. Examples include *Olio*, *Foodcloud* or *Bonapp*, the *Real Junk Food Project*, just to mention a few. Restaurants and shops advertise their soon to expire food or the food that may go wasted on apps such as *too good to go*, *last minute sotto casa*. There are maps for foraging fruit from trees, and an increasing number of platforms that bring together people who want to grow vegetables and people who own small plots of land or gardens (*Lend and Tend*, *3000 acres*). The movement towards urban growing is expanding considerably both with the success of allotments and as private or community initiatives such as *Sow the City*, *the Big Dig*, *Plantez chez Nous*.

Object banks or libraries are also present in various cities and regions to put in common tools and household goods for people to share and use. Just a few examples are the *Edinburgh Tool Library*, *Sharevoisin*, *Streetbank*.

5. Conclusions

When we look at how innovators imagine new ways of living and bring their visions to life they tend to design new products and services that are frugal, social and respectful of natural resources. At the same time, they take into account some of the social shifts discussed in the introduction regarding precariousness and the need for greater agency [18] and the constraints of unpredictability. All of these initiatives are predicated on empowering people to make better use of the resources available in society while using the networking power of the web to connect users, consumers to producers, citizens to administrations and organisations. While

none of the services individually express the ambition of providing alternative solutions to financial or professional instability, jointly they delineate an ecosystem in which citizens can use networks to absorb some of the uncertainty. Transitional projects taken together outline a lifestyle that is more conscious but more significantly is highly networked. Be it for energy, food, mobility, housing or leisure, the solutions that are offered increase the horizontal interrelation between different social actors generating opportunities for new types of activities and collaboration.

Supplementary Materials: The IYWTo data is available at IYWTo.com where the directory of services is public and searchable.

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References

1. Clayton, S.; Devine-Wright, P.; Stern, P.C.; Whitmarsh, L.; Carrico, A.; Steg, L.; Swim, J.; Bonnes, M. Psychological research and global climate change. *Nat. Clim. Chang.* **2015**, *5*, 640–646.
2. Klöckner, C.A. A comprehensive model of the psychology of environmental behaviour—A meta-analysis. *Glob. Environ. Chang.* **2013**, *23*, 1028–1038.
3. Steg, L.; Vlek, C. Encouraging pro-environmental behaviour: An integrative review and research agenda. *J. Environ. Psychol.* **2009**, *29*, 309–317.
4. Tobler, C.; Visschers, V.H.M.; Siegrist, M. Addressing climate change: Determinants of consumers' willingness to act and to support policy measures. *J. Environ. Psychol.* **2012**, *32*, 197–207.
5. Salonen, A.; Siirila, J.; Valtonen, M. Sustainable living in Finland: Combating climate change in every day life. *Sustainability* **2018**, *10*, 104, doi:10.3390/su10010104.
6. Lorenzoni, I.; Leiserowitz, A.; de Franca Doria, M.; Poortinga, W.; Pidgeon, N.F. Cross-national comparisons of image associations with 'global warming' and 'climate change' among laypeople in the United States of America and Great Britain. *J. Risk Res.* **2006**, *9*, 265–281.
7. Lee, T.M.; Markowitz, E.M.; Howe, P.D.; Ko, C.; Leiserowitz, A.A. Predictors of public climate change awareness and risk perception around the world. *Nat. Clim. Chang.* **2015**, *5*, 1014–1020.
8. Kollmuss, A.; Agyeman, J. Mind the Gap: Why Do People Act Environmentally and What Are the Barriers to Pro-Environmental Behavior? *Environ. Educ. Res.* **2002**, *8*, 239–260.
9. Verplanken, B.; Roy, D. Consumer habits and sustainable consumption. In *Handbook of Research on Sustainable Consumption*; Reisch, L., Thøgersen, J., Eds.; Edward Elgar: Cheltenham, UK, 2015; pp. 243–253.
10. Beck, U. *The Risk Society*; Sage: London, UK, 1992.
11. Beck, U.; Giddens, A.; Lash, S. (Eds.) *Reflexive Modernization*; Polity Press: Cambridge, UK, 1994.
12. Latour, B. *We Have Never Been Modern*; Harvard University Press: Cambridge, MA, USA, 1993.
13. Urry, J. *Mobilities*; Polity Press: Cambridge, UK, 2007.
14. Bauman, Z. *Liquid Times: Living in an Age of Uncertainty*; Wiley & Sons: Hoboken, NJ, USA, 2013.
15. Douglas, M.; Wildavsky, A. *Risk and Culture: An Essay on the Selection of Technical and Environmental Dangers*; University of California Press: Berkeley, CA, USA, 1982.
16. Eurostat EU. Being Young in Europe Today—2015 Edition. Available online: <http://ec.europa.eu/eurostat/web/products-statistical-books/-/KS-05-14-031> (accessed on 20 March 2018).
17. Office for National Statistics. *Why Are More Young People Living with Their Parents*; Office for National Statistics: London, UK, 2016.
18. Armano, E.; Bove, A.; Murgia, A. *Mapping Precariousness, Labour Insecurity and Uncertain Livelihoods: Subjectivities and Resistance*; Routledge: Oxon, UK, 2017.
19. Gerbaudo, P. *The Mask and the Flag: Populism, Citizenism and Global Protest*; Hurst Publishers: London, UK, 2017.
20. Standing, G. *The Precariat—The New Dangerous Class*; Bloomsbury Academic Press: London, UK, 2011; ISBN 978-1849663519.

21. Boyd, D. Social Network Sites as Networked Publics: Affordances, Dynamics, and Implications. In *Networked Self: Identity, Community, and Culture on Social Network Sites*; Papacharissi, Z., Ed.; Routledge: Abingdon-on-Thames, UK, 2010; pp. 39–58.
22. Broadbent, S.; Gallotti, M. *Collective Intelligence: How Does It Emerge*; NESTA: London, UK, 2015.
23. Mulgan, G. *Big Mind: How Collective Intelligence Can Change Our World*; Princeton University Press: Princeton, NJ, USA, 2017.
24. Broadbent, S. *Intimacy at Work*; Routledge: Walnut Creek, CA, USA, 2015.
25. Botsman, R.; Rogers, R. *What's Mine Is Yours: The Rise of Collaborative Consumption*; Harper Business: New York, NY, USA, 2010.
26. Godelnik, R. Millennials and the sharing economy: Lessons from a 'buy nothing new, share everything month' project. *Environ. Innov. Soc. Trans.* **2017**, *23*, 40–52.
27. Schor, J. Debating the Sharing Economy. Great Transition Initiative. Available online: <http://www.greattransition.org/publication/debating-the-sharing-economy> (accessed on 20 March 2018),
28. Hyysalo, S.; Johnson, M.; Juntunen, J.K. The Diffusion of Consumer Innovation in Sustainable Energy Technologies. *J. Clean. Prod.* **2016**, *162*, S70–S82.
29. Schot, J.; Kanger, L.; Verbong, G. The roles of users in shaping transitions to new energy systems. *Nat. Energy* **2016**, *1*, 16054.
30. Welch, D.; Warde, A. Theories of Practice and Sustainable Consumption. In *Handbook of Research on Sustainable Consumption*; Reisch, L., Thøgersen, J., Eds.; Edward Elgar Publishing: Cheltenham, UK, 2015; pp. 84–100.
31. *ICT4S 2013: Proceedings of the First International Conference on Information and Communication Technologies for Sustainability, Zurich, Switzerland, 14–16 February 2013*; Hilty, L.M., Aebischer, B., Andersson, G., Lohmann, W., Eds.; ETH Zurich: Zurich, Switzerland, 2013.
32. Kotiranta, A.; Tahvanainen, A.; Adriaens, P.; Ritola, M. From Cleantech to Cleanweb—The Finnish Cleantech Space in Transition. ETLA Reports No 43. Available online: <http://pub.etla.fi/ETLA-Raportit-Reports-43.pdf> (accessed on 25 March 2015).
33. Masero, S.; Townsend, J. *How British Companies Are Using the Web for Economic Growth & Environmental Impact*; NESTA Working Paper: A Market Scoping Study; Cleanweb: London, UK, 2014.
34. Baumgartner, S.; Quaas, M. What is sustainability economics? *Ecol. Econ.* **2010**, *69*, 445–450.
35. Ornetzeder, M.; Rohrer, H. Of solar collectors, wind power, and car sharing: Comparing and understanding successful cases of grassroots innovations. *Glob. Environ. Chang.* **2013**, *5*, 856–867.
36. Benkler, Y. *The Wealth of Networks: How Social Production Transforms Markets and Freedom*; Yale University Press: New Haven, CT, USA, 2006.
37. Rifkin, J. *The Zero Marginal Cost Society: The Internet of Things, the Collaborative Commons, and the Eclipse of Capitalism*; Palgrave Macmillan: New York, NY, USA, 2014.
38. Transition2. Available online: <http://www.transitions2.net> (accessed on 19 March 2018).
39. Townsend, J.H. Digital Taxonomy for Sustainability ICT for Sustainability 2015. Southampton University. Available online: <https://eprints.soton.ac.uk/378266/> (accessed on 21 March 2018).
40. Kemp, R.; Loorbach, D.; Rotmans, J. Transition management as a model for managing processes of co-evolution towards sustainable development. *Int. J. Sustain. Dev. World Ecol.* **2007**, *14*, 78–91.
41. Markard, J.; Raven, R.; Truffer, B. Sustainability transitions: An emerging field of research and its prospects; *Res. Policy* **2012**, *41*, 955–967.
42. STRN. A Research Agenda for the Sustainability Transitions Research Network 2017. Available online: https://transitionsnetwork.org/about-strn/research_agenda/ (accessed on 20 March 2018).
43. Spaargaren, G. The cultural dimension of sustainable consumption practices. In *Innovations in Sustainable Consumption*; Cohen, M.J., Brown, H.S., Vergragt, P.J., Eds.; Edward Elgar: Cheltenham, UK; Northampton, MA, USA, 2013; pp. 229–251.
44. Appadurai, A. *The Social Life of Things: Commodities in Cultural Perspectives*; Cambridge University Press: Cambridge, UK, 2011.
45. Miller, D. *Consumption and Its Consequences*; Polity Press: Cambridge, UK, 2012.
46. Gordon, E.; Baldwin-Philippi, J.; Balestra, M. Why We Engage How Theories of Human Behavior Contribute to Our Understanding of Civic Engagement in a Digital Era. In *The Social Science Research Network Electronic Paper Collection*; The Berkman Center for Internet & Society: Cambridge, MA, USA, 2013. Available online: <http://ssrn.com/abstract=2343762> (accessed on 20 March 2018).
47. Ritzer, G.; Jurgenson, N. Production, consumption, prosumption: The nature of capitalism in the age of the digital “prosumer”. *J. Consum. Cult.* **2010**, *10*, 13–36.

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