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Sustainable Consumption Institute

COVID-19, CHANGING SOCIAL PRACTICES AND THE TRANSITION TO SUSTAINABLE CONSUMPTION AND PRODUCTION

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EXECUTIVE SUMMARY OF THE ARGUMENT

- The Covid-19 crisis and the response of ‘lockdown’ has globally disrupted the **normality** of everyday lives, resulting in people **abstaining** from previous practices, or **altering** and **substituting** them; they also **learn and adapt to new practices** and ways to **coordinate and organize** everyday lives within the home (page 12).
- Understanding the impacts of the ‘lockdown’, and debates about the **world after the Covid-19 pandemic**, can be enhanced by taking into account existing **social science research** and associated **evidence on sustainability impacts** (page 4)
- Existing research indicates that disruption and change of practices is already widespread in key areas such as **hygiene** (page 6), **food provision** (page 7), **mobility** (page 8), **shopping** (page 9), **alternative economies and thrift** (page 9), **water use and gardening** (page 10), and **household work, coordination and care** (page 10).
- Disrupted practices often **‘bounce back’** after the cause of disruption ceases; change can be **retained** as a ‘new normal’ but this requires **specific conditions** (page 15). In the current crisis, this also depends on the **timing** of relaxing ‘lockdown’ measures and possible new waves of infection.
- The **sustainability impact** of changed practices, and the likelihood of retaining these, can be **qualitatively assessed** but requires further research to be used as solid evidence; for now, it is possible to provide estimates, drawing on existing evidence as well as theoretical frameworks for interpreting social change (Table 1 on page 18).
- Four **imagined futures** are presented as possible outcomes involving various levels of retaining new practices: (1) **Recovery**, (2) **Collapse**, (3) **Accelerated Transition to Digitalisation** and (4) **Accelerated Transition to Sustainable Development** (page 20).
- The likelihood of one of these four imagined futures materialising is dependent on **individual and collective choice** and the way it anticipates and responds to **local and global socio-ecological conditions** (page 21).
- Therefore, although it is not possible to control the future, understanding how changed practices may lead to a qualitatively different, **more just and sustainable society** after the pandemic subsides requires taking into account the **wider social and economic dynamics** that provide the context for these practices (Figure 2) as well as further developing skills, resources and insights in that direction (page 23).

1. INTRODUCTION

There are times when the public task of academics is straightforward. This is certainly true for the present: the global Covid-19 pandemic that started at the end of 2019 is deeply affecting societies worldwide, and demands a strong response. A vital contribution of academics is to shape immediate actions to save lives and minimise the human suffering that a pandemic brings. Complementary to that, the way societies will come out of the pandemic will be affected by individual and collective choices based on an understanding of possible futures. Academics can help provide adequate evidence to enhance that understanding. The virus threat has led to situations described as 'lockdown' in many countries, leading people to stay at home with all but essential activities closed. For academics interested in sustainable production and consumption, this leads to immediate reflections on how the current coping strategies might feed in to the transition to sustainable societies. Helping to understand the challenges and helping to facilitate this transition is an equally vital task.

This topic is very much discussed in the public realm; in newspapers, social media, and virtual events, people engage in dialogue on what our 'post-Covid' world will look like, often by making comparison to previous crises¹. Here members of the Sustainable Consumption Institute (SCI), as well as colleagues with whom we collaborate closely, spotted an important and necessary contribution that we can make: to present research insight and evidence to ground this dialogue. Our research draws on the social sciences, which we link to processes of technological change, material flows, and ecological dynamics.

Our argument proceeds in two steps, by answering the following questions:

- I. What social practices have changed as a result of Covid-19, and what is the likelihood that such practices, and their alleged beneficial sustainability impacts, are retained after the immediate crisis subsides?
- II. What conditions need to be met to make such retained practices part of an accelerated transition to more just and ecologically sustainable systems of provision?

In our research, we analyse how social practices become established, evolve over time, and how practices occurring under specific conditions lead to system-wide change. We examine the diversity of practices across different communities, places, times and scales, as well as how transformations in practices move society towards (or away) from sustainable futures. As a result, our research provides crucial insights on each of these questions. This report seeks to make those insights accessible to a wide and diverse audience, to draw attention to the evidence that in our view should be considered in preparing for the world post Covid-19. If this report helps to bring accepted evidence into the public dialogue, then we have achieved our objective.

In the following pages, we answer the above questions first around specific areas of interest, such as practices of cleanliness and hygiene, food provision, thrift, shopping, mobility, and gardening and water use after periods of extended drought. We include an assessment of the sustainability impacts, which are not necessarily beneficial. We then draw conclusions across these areas of interest in a concluding section, including needs for additional research which is needed to provide concrete advice to policy makers.

Frank Boons, SCI Director, May, 2020

¹ We use the term 'crisis' as a shorthand for events that cause major disruption of the day-to-day functioning of society. A crisis can take many forms; pandemic, flooding, drought, war, economic depression and oil boycott are but a few examples in recent memory. It can last anything from few days to several years. Our work takes the perspective that these crises are the result of interacting physical and social causes.

2. OUR PERSPECTIVE: EVERYDAY LIVES AS INTERLINKED SOCIAL PRACTICES, SOCIETAL CHANGE AS (R)EVOLUTIONARY TRANSITION

Like other crises, the Covid-19 pandemic has disrupted existing ways in which people go about their day to day lives. We look at this in terms of a change in established **social practices**, the routine ways in which people have their meals, do their work, care for their personal hygiene and so on. Practices are constituted by shared understandings of how to act effectively in the presence (real or virtual) of other people who engage in similar activities. The purposes of such practices are generally agreed upon, the procedures to follow are widely recognised, and there is shared understanding of which actions are required in which situations. In other words, we can see the habits and routines referred to as **'normality'** as the outcome of the coordination, social order, shared culture and temporalities of practices. Practices undergo **long term change**, as for instance the increase in UK citizens 'eating out' over the past decades. At times they **change rapidly**, as when smart phones altered the way in which we coordinate our social lives. At the same time, they tend to be highly routinised and habitual. A key question that we address in this report is whether the current change that we observe is either temporary, and limited to the period of the lockdown/crisis, or will persist more permanently post-crisis.

With disruption and fundamental societal change constituting one possible outcome, we study change in terms of **societal transitions**: the replacement of an existing integrated set of practices and associated infrastructures, institutions and skills with an alternative set. Transitions may materialise slowly over longer periods (decades), such as the shift from horse and carriage to fossil fuel-powered vehicles, but can also happen quickly when triggered by major disruptions (such as the change to Communism in Eastern Europe after WW2). They cannot be explained as a simple shift from one behavioural pattern to another.

The combined perspectives of transition and social practices underpins our work on sustainable consumption and production, and therefore this report. Social practices are relevant as they are a major factor in shaping the **environmental and social impact** of the technologies, products and services we use to fulfil our needs. An understanding of evolving and revolutionary transitions is needed to understand what pathways lead to structural change in practices.

We apply this perspective to our current predicament in two ways. First, we use peer-reviewed evidence from historical cases of disruption and crisis. Here we need to be cautious: while analogies can be easily suggested, they do not necessarily allow us to draw meaningful conclusions easily. Therefore, we will be cautious, and instead point out the need for additional research whenever appropriate. Secondly, we use evidence of the current situation as it is published by journalists, sector experts and analysts, as it provides the best available insight at this moment.

Structure of the report – We first turn this lens to the disruption and change in practices that have been triggered by the pandemic (section 3). We then turn to the question of retaining practices, including an assessment of (positive or negative) associated sustainability impacts (section 4). This leads into a reflection on possible routes out of the crisis (section 5). We close with conclusions on future research and insights for actions (section 6).

3. PRACTICING THE CRISIS: HOW EVERYDAY LIVES UNFOLD DURING DISRUPTION

In societies worldwide the response to the Covid- 19 pandemic has been to keep citizens at home as much as possible.² In the absence of a vaccine this facilitates physical distancing which, in combination with hygiene measures, lowers the risk of contracting the virus. Social distancing arrangements and the variety of ‘lockdowns’, referring to a variety of forms of household containment and restrictions on movement all over the world, result in **shortages** due to three mechanisms:

- Temporary shortages in the availability of goods caused by **panic** of a collective of individuals - and self-fulfilling prophecy (i.e. toilet paper stockpiling) – leading to massive fluctuations in supply and demand during the first weeks of the lockdown;
- Temporary shortages caused by a sudden change of **citizen practices** that manufacturers and retailers couldn’t keep up with (i.e. shortages in flour and yeast because people have started to bake themselves rather than buying bread and cakes)
- Structural change and potential shortages following **disruptions** and delays of supply of food/water/electricity caused by economic and political effects caused the crisis.

In addition to material shortages ‘lockdowns’ result in disruption of home life, work, schooling and leisure activities. A whole range of practices are affected by social distancing and lockdown arrangements, practices which we know are fundamental to current levels of (unsustainable) consumption, and which require reorganisation in order to meet carbon emissions targets, among other sustainability goals (such as, but not limited to, biodiversity, water use, pollution, inequalities, etc). The sections below discuss a range of practices and sites of practice drawing on existing research, covering practices of (1) hygiene, (2) food provision, (3) mobility, (4) shopping, (5) alternative economies and practices of thrift, (6) gardening, (7) household work, coordination and sharing, and (8) provisioning arrangements and economies of scale.

(1) Hygiene practices

Hygiene and cleanliness practices are highly flexible and deeply dependent on socio-material circumstances that people find themselves in. Infrastructures (e.g. water and sewerage systems) and material conditions (e.g. bathroom design) enable certain patterns of cleanliness and hygiene practices, yet our continued participation in hygiene practices is also based on our understandings of society’s expectations. Though often considered ‘personal’ practices, hygiene practices are deeply shaped by socio-cultural norms and infrastructural arrangements that enact social inequalities and injustices.

The current crisis has many implications for domestic practices and the resources associated with keeping clean. It has a compound effect on water usage: increased water and energy demand as people increase hygiene practices to protect their homes and families against the virus, but also reduced household water use as demands to be ‘ready’ for work or social engagements are reduced. Covid-19 has also revealed society’s unbreakable bond with single-use plastics and the importance of understanding disposable hygiene cultures. In Australia, Unity water reflected upon the range of materials people were flushing down the toilet (e.g., flushing rags, old clothes, newspapers, wet-wipes, paper towels) during the coronavirus crisis, particularly while toilet paper was not readily

² With the important exception of so-called ‘**key workers**’ – individuals who provide medical and social care, collect and reprocess waste, and keep retail shops functioning as key distribution points for food and other basic needs. Their everyday lives are even more complex as they mediate the requirements of ‘lockdown’ with their role in keeping vital societal services going.

available. Focussing on 'unflushables' (products inappropriately disposed of via the toilet), recent research reveals that disposability is about more than the availability of plastic products, but relates to infrastructural imaginaries and design, gender dynamics in homes and society and hygiene cultures that demand convenience and discretion.

In relation to the Covid-19 pandemic it is important to consider evidence from previous pandemics on the long term impacts that crises have on hygiene practices and incumbent socio-material systems. Recent research indicates that many hygiene and cleanliness practices of women in Shanghai and Beijing had been shaped by their previous lived experiences of infectious health crises such as SARS and MERS. These lived experiences shaped the way that these women looked after their homes and bodies, as well as the bodies of their children and others that they cared for. This implies that a health crisis has long term implications on future hygiene cultures and the associated use of materials and products (e.g. soaps, reusable versus disposable products), and the wider resource implications at different scales (e.g., influences on water and energy demand and the use of plastics and chemicals).

(2) Practices of food provision

Disruption and change in practices of food provision can be observed in (a) the place where food is prepared and consumed, (b) food supply chains, (c) the arrangements through which poor people have access to food, and (d) diet.

(a) Before the pandemic affected the UK, restaurants, cafes and canteens were supplying roughly one meal in six to the population of the UK, with about a third of household food expenditure devoted to eating away from home. Food consumed immediately, "on-the-go", as well as digital delivery platforms both were sectors of strong economic growth. As part of the 'lockdown', **eating out**, which had become habitual and routine for a great many people, was outlawed. The closure of locations to eat in and the decreased need for having meals in public spaces as more people work from home, however, has for the moment suspended the lifestyle that was the basis for food to go. By contrast, delivering food to homes, be it individually or through platforms such as Just Eat, is still permitted. For many gastronomic enterprises this is now the only way to maintain their business. This has consequences as it involves large amounts of packaging waste and, arguably, food waste which characterises all convenience foods, whether consumed on-the-go or delivered. The ecological footprint of food provision is a result of meal composition, transportation and packaging, and efficiency of transforming ingredients into calories. There is quantitative evidence indicating that eating out has a higher ecological footprint.

(b) The agri-food systems, with its **global supply chains** and **just-in-time business models** has come under considerable stress through the COVID-19 crisis, which caused worker absence due to illness or self-isolation at home and national governments introducing protectionist measures on agri-food products, putting food imports at risk. In addition to this, foreign workers have been restricted from travelling due to lockdown measures, which has also put harvests of local food at risk. Firms are adapting their practices to maintain supply of vital products and services, often reducing the range of products offered.

(c) The Covid-19 outbreak has affected **emergency food providers** who support vulnerable families. The UK 'lockdown' led to a decline in volunteers and a shortage in food donations. At the same time, the number of people in need of food are rapidly increasing, with around 3 million people living in households where someone had to skip some meals. Some food banks in the UK are being forced to shut down, to reduce, or reorganize the service they offer. Others however are still able to remain open, despite uncertainty regarding food stocks and the necessity to rearrange spaces to ensure safety to volunteers and users. Food donations by supermarkets, ad-hoc campaigns lead by a British online publisher and even the 750 million extra funding for saving some frontline charities from shutting down are necessary palliatives that allow the system to survive along the same lines as before Covid-19.

(d) Providing only 37% of our protein and 18% of our calories, meat, aquaculture, eggs and dairy use 83% of the world's farmland and make up 57% of all food emissions. A shift from animal to plant-based food production would help to reduce UK greenhouse gas emissions, as well as tackle some of the major health issues facing society. However, the **composition of our diet** and its inclusion of meat and other animal products, is as much ceremonial and about pleasing other people as it is about the food itself. And unlike in restaurants, often everyone eats the same food at a family dinner table. In this context, reliance on provision by family members, can be a source of anguish, as multiple pressures play out at meal times: What to eat? When to eat? Who cooks and for whom? Should it be sustainable? How convenient must it be? Market research indicates increased demand for processed meats and away from other more valuable cuts due to the pandemic, while supermarkets anticipate increased consumer price sensitivity and a move toward 'from scratch' cooking as a strategy to feed more people, more often, at home. This appears to be similar to developments during the 2008/09 financial crisis, where the total UK market for meat products decreased by almost 10%, but per capita consumption changed much less significantly. However, a recent survey reports that more people have reduced their meat and dairy intake over the lockdown period, with many intending to maintain this change of diet. Instead, people try animal-free substitutes, such as veggie sausages or oat milk. From a practice perspective, meat and dairy alternatives are some of the easiest sustainability improvements for diets, since the biggest change is the different brand logo and possibly the supermarket shelf; otherwise, they claim to provide similar cooking properties, convenience, meal satisfaction, tastes, textures, and can be used in the same meals but at a significantly lower environmental footprint. It is therefore not surprising to see a strong increase in demand for meat-free brands, as also occurred in historical periods of crisis.

(3) Mobility practices

Transport is the domain where habits have been most deeply disrupted. Scarcely anyone flies or drives an automobile, or uses trains, tubes or buses, but daily permitted bouts of exercise are increasingly done by walking or on a bicycle. The energy used for transportation is much reduced as mobility patterns are transformed. Reduction in the use of fossil fuels has well documented effects in improving air quality, demonstrating once and for all that it is human activity which causes global heating. Holidays are cancelled, second homes out of bounds and the police block country roads. The social effects include massive expansion of online substitutes for face-to-face interaction, working from home, more extensive and elaborate commercial deliveries to the home, suspension of almost all communal activities and recreation and a reduced readiness to embark on long distance travel. Thus, GHG emissions foregone in transport are thus partially offset by increased emissions from deliveries and increased energy use in the household.

Urban public transport systems have been at the forefront of early responses to the Covid-19 crisis. From Greater Manchester Mayor Andy Burham's suggestion that the city-region's light rail system could be mothballed to Milan's post-lockdown plans to reduce car use and turn over 35km of city streets to cyclists and pedestrians, issues of how we move about densely populated urban areas or indeed whether we should and how we would do that safely and appropriately have raised huge questions for the future of urban mobility systems. Furthermore, the environmental impact from the lockdown's widespread near normalisation of homeworking and the requirement for only essential travel has produced stark environmental consequences, including improved air quality and lower carbon dioxide emissions. This has begun to renew public debate about the potential for more effectively addressing the public health effects of air pollution through building low carbon mobility networks that are also more resilient to future crises. This is part of the ongoing UK transition to more sustainable modes of transportation.

Once the 'lockdown' is (partially) relieved, a major issue will be how to practice social distancing while using public transport. Here the perception of safety will be important in shaping the use of

modes of transportation: people may well decide that individual transport is to be preferred over the risk of contamination while using bus and train.

(4) Shopping practices

Covid-19 led to profound changes in the practice of shopping for goods and services, in terms of both *what* is bought and *how*. With rising unemployment and consumer confidence at a low, many households reduced expenditures to cover necessities only. Markets for **durable goods** are adversely affected by this, a trend that could also be observed in previous economic downturns. However, and unlike in the past, government-imposed social isolation and closures of shops mean that core practices that support purchasing decisions – from expert advice to trying on clothes – had to be given up, putting double-pressure on markets for durables. With all the credits that the ‘digitalisation’ receives in times of isolation, it is thus important to point out that, more than ever, households rely on the continued functioning of appliances and electronics. When this extends the time-in-use of the device, this has been shown to have substantial positive environmental impacts.

In the worlds of **non-durables**, especially food and basic household supplies, the case is rather different, as total sales have been somewhat less affected than the modes of provisioning, and with those, the specific goods that are bought. Most evidently, demand for e-commerce and non-restaurant food delivery services soared, even for niche offers like organic vegetables boxes. But the more traditional practice of shopping in supermarkets underwent significant changes as well. Substantial adaptations to practices ensure physical distance could be maintained between customers and staff. In association with that, less frequent visits and buying in bulk have become more common and many households buy processed, packaged and frozen food to secure mid-term supply of food. At the same time, the unlikely increase in demand for goods like bread machines indicates that many households shift to self-provisioning as a means of avoiding social contacts.

(5) Alternative economies and practices of thrift

Research on thrift and resource scarcity indicates how a crisis does not simply make certain practices obsolete; rather it requires people to reclaim, invent and adopt alternative (i.e. distinct from convenience consumerism) practices. Practices of thrift (re-)emerge in periods of scarcity and austerity; in some cases, they shape the approach to resources throughout the life of the generations that experienced the crisis.

Practice-based work on **thrift** is significant because it enables us to understand how thrift operates across a continuum of motivations, the reference points which, under pre-Covid circumstances, are: financial necessity (poverty), conscience and enjoyment. What we have seen during this pandemic is a crisis response which extends this continuum of thrift into the realms of resource scarcity. People are being cautious and avoiding waste due to a fear of not being able to replenish, something which is often but not always, separate from thrift for financial necessity, particularly given the inequalities the Covid-19 crisis is highlighting. Indeed, what we have experienced is more like wartime austerity measures of rationing.

A second way in which households have responded creatively to the crisis is in large-scale participation in **volunteering and mutual aid networks**, grassroots movements which offer an organic and neighbourhood-level form of community care that has proved important in providing essential medical goods and food for people self-isolating. Food banks, neighbourhood relationships which in some cases did not previously exist, NGOs and community groups such as ACORN have played essential roles. We see the economy as plural, and these ‘communal’ modes of provisioning filling the gaps between what the state and market have been able to provide, while also offering important mutual support and care which cannot be underestimated for its impact on mental health and loneliness, exacerbated by many elements of this crisis. We note an extensive literature on

alternative routes of supply in crisis, on alternative economies and the literature on collaborative or platform-mediated consumption. Similar alternative economies emerged out of the financial crash in a number of countries, but these temporary shifts in modes of provisioning are often valuable networks which could play a significant role in the future economy.

Research has identified *environmental conscience* as part of thrifty practice; people getting the most out of resources to try to prevent excess waste – be that through re-use, repair or redistribution. Many of these motivations, particularly around reuse, are fundamentally challenged by Covid and the risk of infection. Before lockdown – reusable water bottles and coffee cups were banned from major coffee chains and reports were issued that plastic bags are safer than reusable in preventing the spread of the disease. Thus, our motivations to be thrifty have been changed and challenged. This has consequences across the board: from who has the financial (and storage) capacity to engage in activities such as buying in bulk, revealing inequalities at multiple levels; to what are the impacts of these changes upon the environment; let alone the impact on the emotional wellbeing of the population.

Finally, similar to citizens adopting practices of thrift, *firms* often need to handle disruption of supply chains by improving the use they make of resources that are available. Historical sources indicate how firms improved *resource efficiency* after the first World War in response to blockage of international supplies of raw materials. This evidence also suggests that countries differed in the extent to which they were able to engage in practices of resource efficiency; for example, in Germany existing centralised structures for waste collection enabled these practices to a greater extent than in Britain. During WWII, research indicates that an effective and officially sponsored system of salvage and recycling was established, which was kept in place as long as scarcity persisted immediately after the war ended. We can see different firms' variable capacity to engage, however, as being partly a function of size – so far, the crisis and bailout measures have significantly favoured large firms specialised in online ordering and delivery operations, resulting in increased volumes of packaging needed for such deliveries.

(6) Water use and gardening in times of drought

While less encompassing than a pandemic, droughts have substantial impact on everyday lives. Research has shown that domestic practices can adapt to reduce everyday water use. Empirical research on droughts demonstrates that domestic practices are readily adapted to reduce everyday water use during periods of *water scarcity*. Adaptation is seemingly triggered by environmental cues (declines in rainfall, increased need for garden watering and rising temperature), as well as strategic efforts to reduce demand (e. g. from marketing campaigns to water restriction). It also relates to how people manage personal hygiene and thermal comfort during hot, dry weather, and how they entertain themselves as many of these practices involve water use. Peoples' experience of water scarcity and drought management, impact on their everyday lives in profound ways; calling previously taken-for-grant practices of water use into question and provoking changes in habits and routines. Evidence on drought in the UK shows how gardening practices adapted during drought to become less water intensive.

Social distancing measures in the current crisis undoubtedly affect ordinary patterns of *garden usage* for those that have one and it is important that the short- and long-term impacts of these changes are understood. In many countries the garden has been reframed during social distancing; for some a space for food self-sufficiency, for others a space for exercise or a second living room. The resource implications are multiple here, not least the possibility of increased water use as people who previously cared for a garden maintain and improve these outdoor spaces. Even more interesting however is the implication for water use as swathes of the population become users of previously neglected garden spaces. Previous research identified a substantial cluster of people with

gardens who saw outside space as 'dead' space and didn't water it; this may well change as the garden now becomes part of the physical space where live their everyday lives.

(7) Household work, coordination and sharing

In affluent countries of the global north, the private home has been seen more as a site of consumption and leisure than as a place of employment or production. Although the internet, broadband and other telecommunications technologies have made it increasingly possible to shop and perform paid work 'from home', doing so has, up to now, remained the exception rather than the norm.

Restrictions on leaving the house have inevitably led to alternations in who is at home and for how long, as well as the type of tasks that are performed by those living there. Disruption and change are here difficult to identify in a generic way, as 'normality' is highly differentiated to begin with. Depending on household composition, the way in which income is generated across household members and the division of unpaid tasks and the extent to which household members are designated as 'key workers' creates a variegated set of starting conditions that will play out differently during the 'lockdown'. For some people, restrictions on access to activities outside the home will have increased the time available to engage in practices they would not normally have the opportunity for, such as reading, painting, gardening are tasks. For others, the concentration of existing household tasks, paid work, childcare, schooling and food provision will have greatly increased pressure on time and skills for coordination.

The **blurring of boundaries between household and workplace** has enabled greater flexibility in the way people combine paid and unpaid work (such as caring responsibilities) as well as having the potential to reduce transportation-related environmental impacts of employment. At the same time, households are also sites of inequality and 'home' as a living space is experienced in vastly different ways by individuals depending on a range of social factors including age, gender, class, ethnicity, citizenship status and dis/ability. For many people home is a site of conflict over roles and responsibilities at the best of times, oppression and exploitation at the worst of times. Evidence clearly indicates how gender inequality translates into a division of caring and domestic labour within heterosexual couple households where women spend many more hours doing unpaid labour than men. In households with dependent children or adults, care-giving must be juggled with paid work, often leading to overburdening of those with greater share of domestic responsibilities (which tends to be women). The evidence thus far from the Covid-19 lockdown indicates that sexist gender roles may be being reinforced as one result of the requirement to conduct all necessary tasks under one roof.

Reports of the dramatic increase in **domestic violence** during the C-19 have been covered in the UK media. This finding is not surprising because there is a wealth of social scientific evidence that during times of stress, such as unemployment and impoverishment, power imbalances in households result in increased levels of interpersonal violence against the less powerful members (e.g., children and women). There is evidence that homes are not safe places for many people and for people living in violent relationships the current 'stay home' guidance means being locked in with their abuser.

Most modern private dwellings have been designed according to life patterns that involve household members 'going out' to work, learn and shop; few have been designed for internal privacy or the stockpiling of goods and nor have they been designed for cooperation and sharing between households. Work on co-housing suggests that growing numbers of people in Europe are turning to alternative housing designs and arrangements precisely because of the limitations of single-family dwelling. Lockdown during the pandemic has raised awareness that the **built environment** builds-in

dominant assumptions about the purpose of the domestic sphere and the activities that take place within it, making it very difficult to adapt to social changes. For example, houses designed for the nuclear family (with a master bedroom, small children's rooms and open-plan kitchen-dining areas) are poorly suited to adult co-habitation, self-employment and household groupings that do not have lots of 'disposable time' for full-time housework and cleaning; they also tend to be energy inefficient and designed for unsustainable levels and types of consumption. It is becoming increasingly evident from the impacts of the Covid-19 crisis and backed up by our research, that typical modern households, as spaces and social units, play a significant role in sustaining environmentally and socially unsustainable practices.

(8) Positioning the household in changing forms of provision and economies of sharing

The household plays an important role in conjunction with other 'scales' of sharing goods and services, and these varying **economies of scale** affect their environmental implications. Whether practices are carried out in households or in public is now critical for the current and public health response to Covid-19, but this question also offers opportunities for a better response to environmental crisis. A population always 'shares' its resources, from our use of roads, libraries, parks and shopping centres, to kitchens, heated space and meals. We can benefit from economies of scale by using resources *simultaneously* (when we eat together or watch a football match together in the pub) and *successively* (using the same bathroom in our homes, the same park but at a different time to most others). In the current context, the ways in which we share our space and resources in our daily practices – in visiting the shops, our living arrangements and how and with whom we spend our leisure – matter enormously for managing infection rates as a society.

Research indicates that recently, the resourcing of social practices in the Global North has tended to lead to reductions in the numbers of people sharing their activity either simultaneously or successively, for example in the transition from launderettes to domestic washing machines, and reduction in numbers of cinemas and rises in TV watching at home. This contributes significantly to escalating the resource intensity of everyday life. Yet this shift from public to domestic provisioning is precisely what the response to Covid-19 has required with an enormous number of practices, from social interaction, which is reduced or moved online, to education, with schools shutting, to most employment, which is again reduced through lay-offs and furloughing, or moved into the domestic sphere where people work from home.

As the most severe restrictions and 'lockdowns' begin to lift and social distancing measures evolve, the number of people **sharing public resources** at particular times is critical for managing infection rates, and also offers some opportunities and challenges for environmental sustainability. For example:

- The **sharing of work spaces** in employment will continue to be shaped for some time by the risk of re-infection surges, likely to result in further significant shifts 'from public to domestic' of employment. Rises in home-working practices could also dramatically reduce the resource intensity of commuting and work-related travel, responsible for a significant portion of resource intensive transportation.
- The need to spread out the **shared use of public infrastructures** through 'successive sharing' rather than 'simultaneous sharing' looks likely to become very important. There is speculation that this could entail the temporal staggering of work shifts and schooling hours to make safe distancing easier, a rise in smaller and more often repeated public entertainment forms, and other creative arrangements which allow people. The staggering of working and schooling hours could also have a significant effect in reducing and flattening the 'peak times' for energy usage that the shared domestic schedules of the population – which has positive implications as the maximum capacity the grid need cope with might be reduced.

Conclusion on disruption and change in practices

As can be discerned from the evidence above, the effect of the Covid-19 crisis and 'lockdown' on everyday practices takes different forms:³

- **Abstaining from practices:** some activities cannot be performed, are no longer meaningful, or have been banned. Therefore, people abstain from them altogether (i.e. going to the beach, attending a music festival, lab work in research centres, commuting between home and workplace). Note that abstaining from some activities can free up time which can be used to engage in other practices.
- **Substituting and adjusting practices:** in many cases activities can be adjusted or substituted for existing similar ones: going for a coffee at Starbucks is replaced with having a coffee at home; doing fitness at home rather than at the gym; doing administrative work at home rather than in the office; eating at home rather than eating out; online shopping with home delivery rather than going to shops. These change economies of scale and sharing.
- **Learning new practices:** to some extent staying at home requires learning new practices. One example that has received much attention and which has been the topic of several 'how to' articles and vlogs is how to do virtual meetings. But learning can extend to other activities such as cooking, repairing broken devices and extending garden use to grow vegetables.
- **Rebalancing and adjusting daily rhythms:** complementary to these three effects, people sharing a living space in an intensive way requires them to engage in practices of coordination. While taking many forms, it is perhaps most pressing in households where childcare, schooling, paid work and daily chores need to be distributed, especially when this distribution is uneven.

A key question is how these effects translate into changed social and environmental impacts of people leading their daily lives. To some extent these changes are straightforward: abstaining from commuting leads to significant reduction in GHG emissions (this effect is only marginally offset by additional emissions from home deliveries and the substitution of personal cars for public transport). At other times there are more complex effects in terms of the goods and services and infrastructures which supply people at the same time.

4. RETAINING PRACTICES: BOUNCING BACK OR 'NEW' NORMAL?

The diversity of practices that are affected by Covid-19 and the 'lockdown' requires us to look at the possibility of retaining changes within particular contexts: (1) water use, (2) food provision, (3) shopping, (4) mobility, (5) household work, coordination and sharing and (6) collective appreciation. Based on the available evidence, we present the conditions that play a role in change being retained.

(1) Water use – While we noted behavioural changes in water use during drought can be profound, recent evidence on drought in Queensland, Australia, as well as in the South East of England, suggests that once rainfall resumes, however, domestic practices rebound, returning water use to pre-drought levels. Evidence on retaining practices comes from studies of migrant communities where migrants coming from arid countries to the UK retain significant practices of water conservation. This suggests that longer immersion in a society with water saving practices is needed for practices to be retained.

³ We focus on practices that take place in the context of the household. In addition to this, effects can be seen in the public space (the norm of social distancing leading to people wearing masks, supermarkets rerouting their shops).

These findings suggest that the peoples' experiences of drought temporarily disrupt normal practices of water use, but without further intervention they fail to engender any more radical change in people's relationships with water. Material changes in infrastructure, rules and norms about using water and other interventions would be needed for new practices to become firmly embedded.

That said, there is also evidence for rapid changes in governance, once extreme events lay bare unreliable assumptions. The Covid-19 crisis has revealed important inequalities in local infrastructure – for example, the accessibility of green space and unevenness of garden ownership, with implications for health and wellbeing as well as water use. It has also demonstrated the diversity of lived experience and the differentiated capacity people have to adapt practices associated with work and exercise, for example. These differences are concealed when planning practices work with average water use. There is the possibility that the diversity of experience exposed by the pandemic could create conditions for a different mode of managerial action going forwards that is sensitive and responsive to peoples differentiated experiences.

(2) Food provision – While disruption has been substantial, the practice of eating out for recreation and convenience, which has matured over the last fifty years, will probably not change fundamentally. Despite people having been constrained to buy more food from retailers and to prepare more meals in the home during the months of lockdown, there is no reason to expect a permanent drop in participation. In this respect, a 'bounce back' of practices, along with its environmental impacts, can be expected. There may be an effect on catering businesses; while there are some robust international chains, many smaller establishments may struggle or disappear, especially as volume of demand will be slow to recover in the face of general slump and reduced household income.

Moreover, the fragility of the UK agri-food system, with its high dependency on imports and low-paid migrant workers, has been exposed. With the wider public becoming more aware of the issues related to the Nation's food supply, the lack of appreciation of skilled staff who have emerged as 'essential workers' during this pandemic has been raised. The current situation opens a window of opportunity for this increased awareness to translate into appreciation of more sustainable business models which take into account the restoration of forests and lands that support our agriculture and value natural capital correctly in order to build national and international resilience to shocks such as the corona crisis. The stress on emergency food providers might have a similar effect.

Raised awareness may also lead to greater acceptance of regulations and general changes in consumption and thus a window of opportunity for implementing legislation towards sustainable rates of production and consumption of animal-sourced foods as well as sustainable horticultural practices. The opportunities created by Covid-19 for the sustainability of food thus lie rather within changes to the political climate such as (1) the more clearly exposed failure of neoliberal austerity to protect citizens and (2) the previously (i.e. within the confines of neoliberal austerity) unthinkable restriction of household and corporate economic practices and (3) a general acceptance that lasting changes of whichever sort are inevitable.

In terms of diet, previous situations of shortages leading to meat substitution show that practices 'bounced back'. However, this crisis may be different, due to already changing attitudes towards eating more plant-based foods as well as allegedly more 'authentic' tastes. But once back amongst peers and invited for a Sunday dinner at Grandma's or a barbecue with work mates, they may not dare or find it appropriate to proclaim their changed preferences. And maybe their favourite pub does not serve a vegan burger and their favourite cafe does not serve an 'oat milk latte'. Existing

dietary patterns cannot simply be transferred across places (away from cafes, or other people's homes), but need to accommodate changes in the social networks and the provisioning system.

(3) Shopping – In previous economic downturns, the demand for durable goods recovered much slower than other parts of the economy. Following the financial crisis of 1929, for example, consumers in the US held on to their possessions for much longer periods, an effect that lasted for nearly a decade. For most product categories, such trends in product lifetimes lead to significant reductions of environmental pressures. Beyond periods of economic turmoil, however, such effects could not be recorded in the past. It is also unlikely that this time will be very different in this regard. The current situation may nevertheless have lasting effects on shopping practices due to the unprecedented shift to e-commerce and delivery services. Media technologies and the internet have experienced a significant re-evaluation during times of physical distancing (after having been blamed for isolating rather than connecting people), meaning that many users may be more open now to shop online. Conversely, this could accelerate the loss of interest in traditional formats like print media and DVDs. Of further significance for the future of shopping and consumption more widely are the devices households bought during social isolation, such as exercise and office equipment. Following theories of practice, such materials play a crucial role in establishing and stabilising new routines, thereby making it more difficult to return to previous practices. Needless to say, a potential long-term relocation of practices to the home - from work to leisure activities - would have profound implications for shopping and beyond.

(4) Mobility – Clearly, the immediate environmental benefit of the crisis in terms of reduced air pollution and GHG emissions is immediately eliminated when commuting resumes, which will depend on people retaining the practices associated with doing work at home. This is possible for only part of the workforce, specifically those in jobs consisting of administrative and other laptop-based work, as well certain managerial tasks. The viability of this will be affected by employers considering potential savings in the real estate cost associated with office space. Decisions to abandon office space will be a powerful enabler of retaining remote working practices.

This will not affect all workers and for any commuting that has to take place a complicating factor may be a particular resistance to returning to public transport, which may result due to lingering fears of close proximity and of touching multiple surfaces that others have touched. Thus, paradoxically in the longer term the crisis might lead to increased emissions as individual cars substitute the use of public transport.

The 'lockdown' has meant people abstaining from buying cars, as showrooms are now closed. In combination with negative income effects that might result from Covid-19, in the longer term this may feed in to the ongoing transition to electric vehicles. Beyond commuting, transport systems have become more vital as various systems of provision now rely on online purchases combined with deliveries. In some instances, this has produced considerable strain on logistical systems.

(5) Household work, coordination and sharing – Research on everyday practices has demonstrated the importance of household coordination, as visible in efforts to manage time spent on work, domestic duties and other social responsibilities, to our understanding of collective patterns of resource use. Studies of resource intensive practices surrounding showering, laundry, food provisioning and meat eating, have demonstrated how the routines that emerge from the interconnections between people, organisations and the activities that constitute everyday life, act to sustain resource intensive trajectories (more showering, more laundry, more meat eating), and constrain efforts to enact behavioural change to reduce environmental footprints. While members of a household will have found a new temporally organized distribution of changed practices, these practices may bounce back as this balance unravels as soon as the 'lockdown' is relieved.

(6) Collective appreciation of care work – One change that appears to be taking place is the increased level of attention to the value of care work as well as acknowledgment that it is vastly undervalued in contemporary societies. There are amplified demands for better pay and social status for people employed in the care sector (including the NHS, adult social care and childcare) and some reflections on the need to put care work at the heart of a ‘just recovery’ (as opposed to ‘just transition’) after the pandemic. Perhaps this shift in public consciousness will lead to changes in policy and enduring shift in the economy from one centred on profit, competition and growth to one centred on wellbeing, care and sustainability. However, it would be wrong to be optimistic, since special programmes and services set up by the state under extreme circumstances to mitigate hardship or enable economic survival can just as easily be withdrawn when crisis conditions have ended. For example, the services that were set up to enable women’s paid employment (such as state-run nurseries and canteens) were discontinued after both World Wars. Similarly, labour force gains were also transitory as women were demobilised from ‘men’s work’ to make way for the returning military personnel. The pandemic may lead to some changes in attitudes and some policies around the social provision of care, but unless there are fundamental changes in power structures and the basic assumptions and principles of orthodox economics (amongst other disciplines), the chances of a return to the way things were pre-Covid-19 are high.

Conditions for retaining practices

Our research confirms a basic assumption of theories of practice is that after a period of disruption people will mostly return to their old routines and habits, seeking to perform practices in much the same ways as before. Such **bouncing back** occurs, unless:

- they have learned new practices to which they have become positively attached in the interim;
- the infrastructure and facilities supporting earlier practices are changed such that old habits are no longer possible or are less congenial. Or, new equipment re-directs attention towards new practices;
- people lack the personal resources, health or finance to return to previous ways of acting;
- new regulations and new prohibitions eliminate some previous practices and enhance or promote others/new ones;
- a changed cultural context alters how people value or conduct activities;
- adjustments in other, adjacent and more distant, practices have knock-on effects.

When one or more of these conditions is met, a ‘new normal’ may come about. We will leave for now the question what this new normal may look like as the combined and configurational effect of these possible mechanisms within a wider societal context; this is the work done in the next section.

Sustainability impacts of disrupted and changed practices

A key step in the argument on retaining changed practices concerns its alleged beneficial effect on GHG and air emissions and other **sustainability indicators**. Ideally, we would be able to precisely estimate these effects and combine them with the likelihood that these effects are maintained because we can expect changed practices to be retained. At this moment in time, the evidence to do that is not available. We can make a rough estimate based on the evidence produced thus far. **Table 1** on the page 18 summarizes the insight, with question marks indicating lack of evidence. A number of points are of interest:

- The disruption and change in practices as a result of Covid-19 has positive as well as negative sustainability impacts;
- Several of the positive impacts come from changed and disrupted practices which are likely to bounce back;

- For many of the practices listed, retaining them will be a mixed blessing from a social and/or environmental perspective;
- Evidence on the likelihood of retaining practices is often weak or non-existent. This requires research on the conditions associated with retaining practices: positive appreciation, the prolonged availability of needed infrastructure and resources, norms and regulations, and supportive collective awareness.

<i>area of provision</i>	<i>change in practice</i>	<i>*)</i>	<i>sustainability impacts</i>	<i>**)</i>	<i>Comments on likelihood estimate</i>
<i>cleanliness</i>	use of PPE and disinfectant in households		*increased (plastics) waste *potential water pollution	++	bounce back may take months depending on rules of eased lockdown
	substituting wet wipes for toilet paper		*increased use of single use plastics *marine plastics pollution	?	counteracting effect of convenience vs. awareness of pollution
	intensified in-house cleaning and laundry		*increased water use * more (gendered) housework	++	bounce back may take months depending on rules of eased lockdown
<i>food provision</i>	substituting home cooking for eating out		*packaging waste *lower economies of scale increase food waste * more (gendered) housework	+	some evidence of reskilling and appreciation (of affordability as well as pleasure)
	increased or decreased meat consumption		*change in embodied GHG emissions	?	compound effect of income effect, appreciation of meat alternatives, and peer pressure
<i>mobility</i>	abstaining from commuting, leisure travel		*decreased GHG and local air pollution	++	-
	substituting private for public transport		* increased GHG and local air pollution	?	some evidence indicating reluctance for public transport use, but inequality due to car access/ownership
	Collapse in car purchases		* decreased resource throughput	+	delayed consumption, possibly mitigated by income effects
	Increased walking and cycling		* decreased GHG and local air pollution	?	cycling may be retained (bike sales), adequate road infrastructure is required
<i>shopping</i>	Decline in purchase of durables		* reduced waste; longer life for existing durables	++	delayed consumption, possibly mitigated by income effects
	Shift in purchasing practices to online + delivery		* Reduced transport for shopping * increased packaging	+	convenience supported by platforms ability to retain market share
<i>alternative economies & thrift</i>	Individual/household practicing of thrift		* reduced waste and resource use * increased time spent on provisioning	?	-
	Thriving community organisation and provisioning		* reduced waste and resource use * increased social capital	?	some evidence of increased success of existing organisations, possibly leading to new structural opportunities
	Threats to reuse from fear of COVID		* increase in single use plastics	++	bounce back may be delayed
	Corporate initiatives for resource efficiency		* reduced waste and resource use	+	-
<i>household coordination</i>	Increase in household labour and infrastructures		* increased resource throughput	?	depends on how change in work practices will be retained
	Reinforced gender divisions of labour and violence		* increased level of abuse victims * increased pressure on service provision (health & policing)	?	depends on how change in work practices will be retained
<i>sharing & eco. of scale</i>	declining collective provisioning through lockdown		* increased resource throughput * increased time spent on provisioning	?	depends on how change in work practices will be retained

**) red: overall negative impact; orange: neutral, or mix of positive and negative impacts; green: positive impacts **) likelihood of bounce back; across short and long term*

5. BEYOND THE CRISIS: RE-IMAGINING THE FUTURE

One significant change that can be observed in the public domain is the very active and widespread engagement with the question what the future will look like after the threat of the virus has subsided. These range from predictions about the depth and length of the economic depression, to calls for actions which see the disruption caused by Covid-19 as an opportunity to redirect the developmental path of society and come from entities such as the G7, the environmental committee in the European Parliament, 350.org and so on. Many of these arguments seem to follow either of the logics depicted in Figure 1.

- a) **logic of behavioural change**: Covid-19 leads to changed practices which result in a reduction of environmental impact. The awareness of this reduction creates a reinforcing feedback loop: awareness leads citizens to retain their changed practices as the 'new normal';
- b) **logic of recovery**: Covid-19 leads to changed practices which result in reduced economic growth. This leads to a stabilising feedback loop: efforts for economic recovery seek to facilitate a bouncing back to pre-crisis practices.

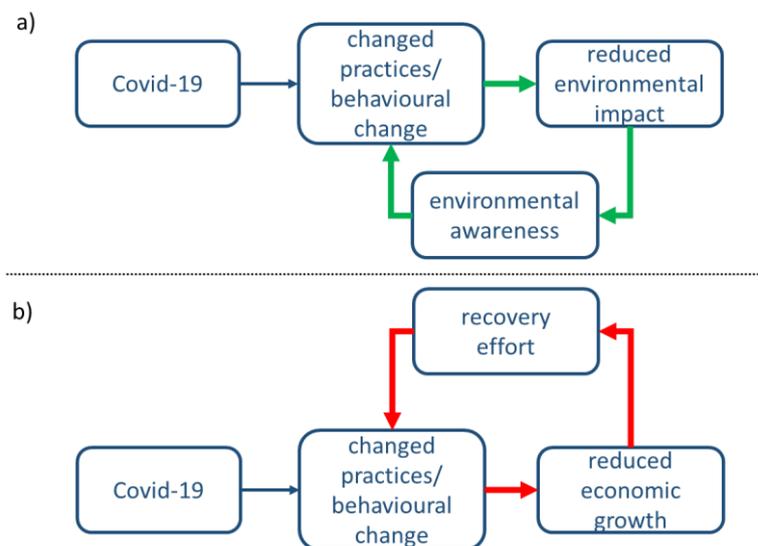


Figure 1. Visualisation of logics employed in statements about the post-Covid world

From our perspective, these logics are incomplete in two ways. First, due to staying at the general level we miss out on the specific conditions, identified in section 4, that will keep a new practice in place in one setting while it will bounce back to previous practices in another setting. These setting-specific factors were listed above as change in appreciation for a practice, infrastructure, personal resources, cultural context and related practices. As a result, working from home may be retained for operational office workers but it will bounce back for the managerial workforce.

Overgeneralisation also misrepresents the fact that changed practices lead to multiple changes in sustainability impacts, some of which are desirable while others are not (see Table 1 above).

Secondly, in their simple form both logics ignore the wider societal context in which change takes place. The dynamics that will produce the post-Covid world involve a number of additional factors, including already existing niches of innovation, financial support during the crisis, criteria used for investment and legitimacy of governmental intervention. The interplay of these factors (most of which involve choices we make in the present and near future), combined with the micro dynamics

Part of the argument here is a factor that now moves centre stage: the *practices of visioning and imagining futures*. Such practices are part of normality as firms strategize, governments perform spending reviews and individuals plan their careers. With Covid-19, such activities are thrown into crisis, yet also become particularly important for a sense of purpose and stability. Research on systems innovation indicates its relevance to materialise systems change. A potentially useful analogy of the current situation with the way in which the welfare state was developed in the UK after the world War 2 indicates that visioning starts long before the actual transition, and builds on a longer gestation period in which ideas are developed and refined and coalitions mobilised. The eventual crisis then is the trigger for materialising this vision.

Another factor important here is *civil society*. Social movements and mutual aid networks are, as noted in section 3, fundamental for maintaining society during the crisis and the inevitable gaps in state and private sector provisioning. Yet movements also offer the ideas, imaginaries and political support needed for states to drive forward transformative ecological change. Environmentalists, feminists, housing activists, food banks and other community projects and movements are an important catalyst and make the significant changes needed for transforming the economy democratically feasible. The discourses and demands developing around a 'green new deal', for example, are already generating concrete policies for transforming economies and the societies they serve away from a carbon-intensive, pro-growth paradigm, and the C-19 pandemic will only underscore their importance. As noted above, there has been a slight discursive shift away from 'transition' to 'recovery' (where has this discursive shift happened?), which perhaps suggests that the focus is less on greening energy and other hard infrastructure and more on putting care and rebuilding the soft infrastructure of the welfare state at the forefront of post-pandemic life. Yet much research points to the need for transitions out of a crisis to address inequalities in order to ensure social stability and the well-being of the vulnerable populations disproportionately affected by the pandemic lockdown (the young, the old, women, the unemployed, freelancers and those working in hospitality and creative industries). However different social movement groups have different priorities and concerns for what should be included in these visions. For example, some argue that without the interventions of feminist ecological economics the concerns for intersectional justice that would bring about a deep transformation will likely remain marginalised in GND thinking.

Imagined Future 1: Recovery. The frequency with which the word 'recovery' is used suggests that this is a realistic imaginary for many. It is likely the dominant imaginary, touted by most governments, the label 'recovery' indicating that the crisis is an emergency, a state of exception where exceptional measures are acceptable, to return to a market logic as soon as possible. This imaginary is rooted in the belief that our current societies are able to 'bounce back' as a whole; and does not necessarily rest on a positive appreciation of returning to the previous state of affairs. Government intervention is legitimized, but restricted to short-term support to reinstitute a situation where its role is limited to facilitating a smooth functioning of the capitalist mode of production. In the aftermath of the financial crises of 2007-8 this is more or less what happened; although a window of opportunity for transition may have existed, this closed down and the dynamic of status quo-oriented support for existing activities proved to be dominant; although joint visioning did take place, it did not significantly shape selective investment and bail outs for financial institutions kept the system in place (with some additional restrictions on their activities). Note that this historical analogy is not perfect; the link with increased awareness is not present, nor did a likewise disruption of practices occur.

Imagined Future 2: Collapse. The consequences of the Covid-19 pandemic, especially when seen as part of an interrelated set of humanly-induced crises, could escalate when the failure to contain the morbidity and mortality of the pandemic causes basic systems such as food supply to collapse, which arguably could lead to rapidly spreading social conflict. This imagined future is realistic to the extent that the shutdown and change in practices fail to contain the virus sufficiently or alternatively hampers key economic activities to such an extent that basic needs can no longer be met. This would set us on a path similar to what occurred across the world in the 17th century. This imaginary has implications for the globally interconnected society which existed until Covid-19, and which has accelerated the pandemic. Throughout the crisis national governments have assumed, in various ways, more control and differentiated themselves. The question is how an arguably necessary globally coordinated effort can emerge from that differentiation, preventing a systemic political economic recovery.

Imagined Future 3: Transition. As a disruption of business-as-usual and the ongoing unfolding of daily lives, the pandemic opens up a space for reassessing previous choices, existing institutions and potential alternatives. This reassessment can occur through existing channels of collective reflection and decision making at regional, national and international scales. It can also emerge in a dispersed way through business competition and civil society grass-roots initiatives which gain momentum using social media as a platform. It can be greatly facilitated by existing structures being weakened as a result of the disruptive force of Covid-19. And although completely new imaginaries may emerge, it is likely that transitions will happen on trajectories that have already been formulated, such as circular economy, the bio-economy and net-zero carbon, although such existing framings are likely to be transitional imaginaries towards truly novel reconfigurations. In our view, two key overarching candidates are the following:

(a) **accelerated sustainability of provision.** Although results have not yet matched the ambitions, transitions to improve the sustainability of our energy, food and mobility systems have been underway for some time. In each of these key areas of provision, there is an ongoing dynamic where sustainable forms of provision are diffused more widely and unsustainable forms of provision are losing ground. As with digitalisation, the crisis to some extent provides conditions that can accelerate these existing transitions. While the UK is increasingly moving away from coal-based power generation, the crisis in the fossil fuel industry creates a situation which, left to its own devices (i.e. by withholding support funding), could open up the space for sustainable energy provision.

(b) **accelerated digitalisation.** Already underway through the growing dominance of Big Tech and the ecosystem of activities they invite and facilitate, digitalisation is further enhanced by active governmental stimulation programmes to bring into existence Industry 4.0. Others have labelled this transition in terms of surveillance capitalism, noting its impact on social relations and increased concentration of unaccounted power. In several ways, the crisis is already accelerating this transition, most notably the reliance on online deliveries through platform-based suppliers to continue provision while maintaining physical distance. Similarly, the use of various health monitoring and contact tracing apps to allow an ease of the 'lockdown' further embeds the collection of privacy-sensitive data which drives further growth of the digital economy.

A key question concerns the ways in which (a) and (b) overlap and strengthen each other, or rather compete as alternative imaginaries. The vision of Society 5.0. as promoted by the Japanese

government since 2016, is an example of the ambition to mobilise digitalisation as a way to meet societal challenges, including sustainability.

As is clear from the above narratives, the likelihood of each imagined future materialising rests on:

- (1) the *relative strengths of loops* depicted in Figure 2. For instance, as the loop involving visioning and selective investment is stronger, a narrowly focused recovery becomes less likely.
- (2) *Individual and collective choices* made in different parts of the system. As the example of the fossil fuel industry indicates, financial support to weather the current drop in demand would lead to prolonging the existence forms of provision which are incompatible with widely accepted insights on climate change.

6. CONCLUSION: WHAT WE (DON'T) KNOW AND WHAT WE CAN DO

This report brings evidence from interdisciplinary social science to bear on urgent questions about the impacts the Covid-19 pandemic on societies now and in the future. Answering our two questions on page 4, we have provided insight into the ways in which the pandemic and the stay-at-home order have led people to adjust their daily lives; leaving behind normality, they have reconfigured their daily rhythms, and as part of that have adopted new practices, adjusted existing ones, and are abstaining from others. This happening at a global scale is a rare phenomenon that rightly attracts attention.

We have also provided evidence for the general conditions under which the changes in practices might be retained, rather than bouncing back to the previous normal. This question is important because changed practices are considered a seed for the more structural change that is seen as desirable by many. We added depth to this insight by distinguishing the various sustainability impacts of changed practices, as they are not all positive. We then provided insight into the systemic change that is required to bring this seed to grow and flourish. Taken together, these insights allow for an understanding of the complexity of using changed practices as the source for an accelerated transition.

The overarching argument we are making is that while it is not possible to control the future, understanding how changed practices may lead to a qualitatively different, more just and sustainable society after the pandemic subsides requires not only taking into account the dynamics that provide the context for these practices, but also developing skills, resources and insights needed for moving in that direction.

The argument is premised on two key points that have implications for policy. The first is that social change happens as a result of social learning and collective choices over time, often informed by past responses to disruptions and crises. As the response of SARS-affected countries to Covid-19 has shown, one reason why the aftermath of the Covid-19 crisis can be expected to be different from previous crises is the fact that, due to experiencing those crises, societies may choose to respond differently. We may not be able to control the future, but we can and must make choices. These collective choices should be made on the best available scientific as well as social scientific evidence.

Second, interventions are needed in order to bring about substantive and long-lasting change towards a more just and sustainable society. The Covid-19 pandemic demands interventions that could pave or obstruct the path toward sustainability. Our practice approach in the SCI is founded on the view that for interventions to be effective they need to look beyond the individual to consider all of the contexts – material, structural, social and individual - that shape people's behaviour. By

understanding the different contexts, and the multiple factors and relations within them that influence the way people act in their daily lives, more effective policies and interventions can be developed. This means taking a critical stance towards behavioural models that place disproportionate emphasis on individual consumer-citizens, their personal choices and responsibilities. A more systemic, sociological approach will lead to more effective policies and strategies, resulting in lasting social change that has greater potential to benefit everyone.

There are of course a vast number of questions that are impossible to answer a few short months into a global crisis that is widely seen to be unprecedented and changing every day. There remains much that we don't and can't yet know. However, the Covid-19 pandemic presents an exceptional opportunity for gathering new evidence and carrying out research that will inform economic, political and environmental policy for generations. Building on the existing insights from social scientific study of sustainable consumption, *what we already know* about how practices and societies change, will play an invaluable part in this process.

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