

Aspects of a sociology of the pandemic: Inequalities and the life course

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Abstract

Over the course of the COVID-19 pandemic, the contributions of the social sciences to discussions about pandemic management have become more visible and more significant. In this essay, I review major aspects of a sociology of the pandemic. After providing an overview of the potential contributions of the different fields of sociology (the “toolbox” of sociology), I discuss two main domains: first, social inequalities and how they relate to the process of the spread of COVID-19 from exposure and infection, and to the consequences of the pandemic in the wider population; and, second, the potential long-term effects of the pandemic on the life course.

Keywords: COVID-19; pandemic; social inequality; life course; social networks; social norms

1 Introduction

Virology, epidemiology and mathematical modelling are among the leading scientific disciplines that promised and partially delivered the theoretical and empirical knowledge and the policy guidance needed to deal with the COVID-19 pandemic. Demography has also been at the forefront of the scientific disciplines involved in pandemic management, especially as the impact of the age structure of the infectiousness of the disease has become clear (Balbo et al., 2020). The research presented at the December 2020 Wittgenstein Centre Conference demonstrated the range and the depth of the demographic contributions to these issues. In this review, which is based on an invited keynote lecture to the Vienna conference, I would like to map the potential contributions and some of the actual contributions of sociology

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to these topics more broadly, and to specifically focus on how sociology intersects with demography in analyses of how the COVID-19 pandemic is related to social inequalities and the life course.

In the early weeks of the pandemic, no research results on its conditions and impact were available. Therefore, at that time, the main questions researchers tried to address were what is likely to occur based on developments during prior epidemics, from the Spanish flu of 1918 (Spinney, 2017; Sydenstricker, 1931/2006) to recent outbreaks, including the 2003 SARS outbreak; and which established research findings might be extrapolated to the present situation. Since then, the research literature on the COVID-19 pandemic has exploded in size. As no systematic review of this literature can be provided, I will rely in the current paper on selected empirical studies. Another aspect of the pandemic is that it is a “moving target.” There is no simple dependent variable like a rate that can be used to track its development. Instead, the pandemic must be seen as an evolving process, which has now entered its third year. Thus, observations that might have been valid for the early months of the pandemic may no longer apply in the second and subsequent waves.¹

First, I will give an overview of the potential contributions of the different fields of sociology, and – to the extent they are available – I will refer to specific studies and research activities. Second, I will examine socioeconomic inequalities as both causes and consequences of the pandemic. My major goal here is to develop a systematic schema of the ways in which inequalities relate to the process of the spread of COVID-19 from exposure and infection, and to the consequences of the pandemic in the wider population. Third, I will look at the potential long-term effects of the pandemic from the perspective of an area of research that is analytically very close to demography: i.e., the life course of birth cohorts. For this analysis in particular, we must rely on analogous events and disruptions to assess the likelihood that the COVID-19 pandemic will have specific effects, and the potential severity of these effects.

2 The toolbox of sociology

Sociologists have studied a wide range of topics related to the COVID-19 pandemic, including the impact of the pandemic on schooling, family, gender relations, fertility, work and mobility.² More systematically, we can unwrap the analytical toolbox of sociology and then ask what kind of questions are triggered by these “instruments.”

¹ This paper mostly reviews the literature covering the first wave of the COVID-19 pandemic in spring 2020. In the later phases of the pandemic, the various movements protesting government regulations and vaccination challenged sociological inquiry. They are not the object of my considerations here.

² A good illustration of sociological perspectives and research topics can be found in the now almost two-year-long weekly Corona Colloquium of the [Wissenschaftszentrum Berlin für Sozialforschung \(2020/21\)](#), or in the special issue of *European Societies* ([Lianos, 2021](#)). See also the first major book on the sociology of the pandemic ([Christakis, 2020](#)).

- *Social action and social norms.* What are the conditions that support the emergence and acceptance of social norms? What roles do purposive/rational vs. expressive/symbolic forms of action play in this context?
- *Social relations and social networks.* What do we know about social networks and their consequences for contact and infection rates?
- *Social structure and social inequalities.* Are all members of society equal in the context of the COVID-19 pandemic? Is the pandemic a leveler or a driver of social inequalities?
- *Life courses and social change.* What are potential medium- and long-term effects of the pandemic on individual lives? What are prototypical “trajectories” of pandemics?
- *Social systems: institutions and subsystem differentiation.* How do the relative weights and relationships between markets, the state and civil society change during and after the crisis? How do the activities and relationships within and between schools, families and workplaces change?
- *Culture and knowledge.* What cultural schemata determine our perceptions of and strategies for coping with the pandemic? Does the COVID-19 crisis lead to social anomie, or does it strengthen collective identities and orientations?

I will make a few brief remarks about some of these areas, and will then analyze in more detail the impact of the pandemic on social inequalities and on people’s life courses.

2.1 Social actions and social norms

An issue policymakers have faced throughout in the COVID-19 crisis is the question of how to ensure the population’s acceptance of and conformity with rules regarding social (i.e., physical) distancing, personal hygiene and mask-wearing. Under what conditions are social norms accepted and followed? How can conformity with social norms be enforced?

The textbook answers to these questions seemed quite straightforward, and were already provided in the early recommendations of the German National Academy of Sciences (Leopoldina, 2020). It was assumed that levels of acceptance of COVID-19-related social norms would be higher if they were simple (e.g., the A-H-A rule³), transparent, universal, scientifically based and widely shared in the community (Opp, 2001). While these “norms on norms” were rhetorically followed by policymakers, they were not always adhered to in practice. Even the principle of voluntariness as a precondition of acceptance tended to be controversial and inconsistently applied. However, the contributions of sociology to this discussion could have been even more specific, and thus more helpful. Diekmann (2020) has argued convincingly that it is important to distinguish between norm acceptance

³ The A-H-A rule stands for Abstand-Hygiene-Alltag mit Maske (distance of 1.5 m – hygiene – mask-wearing).

in “cooperation games” and norm acceptance in “coordination games” (see also [Ullman-Margalith, 1977](#)).

In coordination games, the actors themselves benefit from adhering to norms, while in cooperation games, others or society at large benefit from such adherence. Correspondingly, norms that ensure that the individual following the norms does not get infected, such as washing hands, maintaining physical distance and wearing a filtering face piece mask (FFP2), should be more easily accepted than norms that only prevent others from contracting the disease (such as wearing a surgical mask or using COVID-19 apps). Thus, it may be assumed that only the latter types of norms need to be enforced by sanctions.

Moreover, too little attention has been paid in this context to the basic distinction between rational-instrumental behavior on the one hand and emotional/symbolic action on the other. Thus, wearing a mask can be seen not only as a means of preventing infection, but also as a sign of wanting to belong to a norm-complying collective.

2.2 Social relations and social networks

Knowledge about the structure of social networks should be directly relevant to the issue of the diffusion of infection. Examining the density of network relations, the length of networks distances and the nature of the bridges between networks should reveal likely patterns of the spread of disease. It has been argued that having differential knowledge about networks could circumvent the need for full lockdowns. Currently, however, surprisingly little is known about the overall patterns of social networks in advanced societies, or about the specific ways diseases can spread through networks. In a seminal review article about “social networks and health,” [Smith and Christakis \(2008\)](#) reported on the different ways in which diseases are connected to networks: “Social networks affect health through a variety of mechanisms, including (a) social support (. . .), (b) social influence (. . .), (c) social engagement, (d) person-to-person-contacts (. . .), and (e) access to resources.” Their examples of obesity, sexually transmitted diseases, drug use and HIV infection do not, however, point to common patterns. [Brückner and Bearman \(2005\)](#), for instance, described the transmission of sexually transmitted diseases among high school students as a “spanning tree”: i.e., as a single major pathway like a telephone pole and its connected phone lines. The authors also found no evidence of high activity hubs for HIV/AIDS.

[Meyers et al. \(2005\)](#) used network theory to predict the outbreak diversity of SARS. Commonly used COVID-19 modeling assumes fully mixed populations: i.e., that every individual has an equal chance of spreading the disease to every other person. But highly heterogeneous contact patterns with different speeds of infection spread might lead to very different infection rates. For example, in very sparse networks, an infected person may infect no one else or only one person; while in very dense networks, so-called “superspreaders” may act as catalysts of

the infection. Based on a study conducted on Vancouver Island, Meyers et al. (2005) estimated that health workers had the densest contact patterns, followed by school children, working adults and non-working adults. The authors found that cutting contacts by, for instance, 50% had different consequences depending on each individual's contact patterns, resulting in a reduction of risk of 17% for a non-working adult and of 33% for a health worker (Meyers et al., 2005, p. 79).

Mossong et al. (2008) conducted a large-scale, internationally comparative study on "social contacts and mixing patterns relevant to the spread of infectious diseases" that involved 7,290 participants with 97,904 contacts in eight European countries. Their findings indicated that the participants' contacts were highly concentrated by age, especially among high school students and young adults. Contacts that lasted at least one hour or that occurred on a daily basis tended to be physically closer, while those that lasted for shorter periods of time or that occurred less frequently tended to be physically more distant. Contacts that took place at home, at school or during leisure time tended to be closer than contacts that occurred at work or while traveling. The results were found to be robust across countries. Again, these findings strongly contradict the assumption made in most aggregate models that there is an equal probability of infection.

Block et al. (2020) demonstrated with the help of simulation studies how knowledge about network structures can be used to inform strategies for reducing infections by limiting certain types of contacts. Networks with the same numbers of contacts can have different infection rates if the network distances differ. The authors distinguished between the following policy recommendations aimed at encouraging people to restrict their contacts and to reconfigure their contact networks: (a) "seek similarity," i.e., individuals are advised to choose contact partners with similar characteristics; (b) "strengthen communities," i.e., people are encouraged to restrict their interactions to mutually interconnected people within a community; and (c) "build bubbles through repeated contact," i.e., individuals are encouraged to restrict their contacts to people with whom they have repeated interactions, which should enable them to build up disconnected bubbles over time. As *seeking similarity* reduces the number of bridges to geographically or socially distant persons or individuals in other organizations, it should help to contain the disease in localized areas. *Strengthening communities* implies avoiding interactions with individuals who have many outside ties. *Creating bubbles* implies reducing the number of contact partners rather than the number of interactions by, for instance, always interacting with the same classmates or work team members. Following such simple behavioral rules based on network insights can go a long way toward keeping infection curves flat.

2.3 Social systems: institutions and subsystem differentiation

While discussions about social action and social networks refer to individuals, a social systems perspective focuses on the institutional structure of whole societies.

Under normal conditions, societies are highly functionally differentiated, and each subsystem follows its own logic. The COVID-19 crisis massively impacted the relative weights and the interrelations between the state, markets, associations and communities. By defining rules of behavior and by mobilizing resources, the state shifted the balance of power away from firms, families and individuals. The separation of workplaces, schools and families, which had been a major characteristic of modern societies, was weakened and partly reversed. Family homes became workplaces and satellite places of learning. The crisis restricted production and market exchanges, as well as patterns of consumption (Nassehi, 2020).

3 Socioeconomic inequalities: Is the COVID-19 pandemic the “great leveler”?

Adam Tooze, the eminent Columbia University historian, called the late sociologist Ulrich Beck the “prophet of uncertainty” and the “most important intellectual of the pandemic and its aftermath.” (Tooze, 2020, 2021). This was likely because in his book entitled “Risk Society,” Beck (1986) argued that there has been a secular shift away from class differential disadvantages and toward the emergence of new kinds of risks that are often invisible. He characterized these risks as collective, inescapable threats that have an impact “beyond classes, regions and nations.” Although Beck was more focused on man-made risks like nuclear disasters and climate change, his vision of collective risks and of the ensuing uncertainties can also be applied to pandemics in which “nature strikes back.” Beck already foresaw the ambiguous role of scientists in such developments as both experts on and messengers of an otherwise opaque reality.

Likewise, early in the pandemic, Bude (2020) articulated arguments that the COVID-19 pandemic could act as a “great leveler.” He observed that in the pandemic, everyone is equally exposed to the risk of infection, and is equally subject to state-mandated anti-pandemic measures. Thus, everyone may be expected to be similarly dependent on the support of others and on others’ compliance with precautionary measures. At least in Germany and in similar welfare states, each person who becomes infected can expect to receive equal treatment in the health care system. Therefore, everyone seems to be in the same boat in dealing with the pandemic.

Since then, however, the debate has clearly shifted, as massive inequalities have been observed in both the risk of contracting the disease and the distribution of the pandemic’s economic effects and other consequences. But when considering the validity of the “COVID-19 pandemic as the great leveler” thesis, the argument that social inequality is driving the pandemic might be too radical. To assess this claim, we need to distinguish between the many different facets of the COVID-19 pandemic in which inequalities come into play, and to ask what we can theoretically assume and what we already empirically know about the effects of inequality. Rather than examining the causes of inequality in general, we need to look at the specific mechanisms through which inequalities translate into risks.

Specifically, we should start by distinguishing between the following risk groups and risk types. Ideally, we would then not only combine *risk groups* and *risk types*, we would also consider their degrees of vulnerability and resilience, as well as their processes of accentuation and compensation.

3.1 Risk groups

We can distinguish between four kinds of groups who differ systematically in their exposure to or ability to cope with COVID-19-related risks:

- *Socioeconomic and socio-cultural inequalities*. These can be of a gradational or a categorical nature (Blau, 1977; Tilly, 1999). For example, inequalities may exist along a continuum of economic resources like disposable income, or they may be based on categories of social exclusion, like the category of migrants.
- *Socio-demographic groups*. These groups are defined by their living conditions, household characteristics or family status, such as individuals living alone, solo mothers, families with more than two children, multi-generational households, individuals living in nursing homes and people living in crowded housing (e.g., seasonal workers).
- *Occupational groups*. These groups may be based on employment status (e.g., self-employed individuals, hourly workers or salaried employees), economic sector (e.g., manufacturing, retail or services) or closeness to clients (e.g., kindergarten teachers, cashiers, health workers or bus drivers) (AOK, 2021; Chen et al., 2021).
- *Ethnic and minority groups*. There have been numerous indications that members of ethnic minorities have experienced higher rates of COVID-19 infection and of COVID-19-related mortality (Bambra et al., 2021, pp. 21–22; Drefahl et al., 2020). Since most of the existing evidence on this topic is based on urban regions, whether this is also the case on the individual level has been disputed (FAZ, 2022).

3.2 Risk types

In the debate about how inequalities and the pandemic interact, global claims have been made about the impact of social inequalities on the COVID-19 pandemic, and about the impact of the COVID-19 pandemic on social inequalities. However, the sizes and even the direction of these potential effects may differ significantly. Thus, it is important to distinguish between the different types of risks and the corresponding inequality effects (see also Bambra et al., 2021, pp. 8–9), including:

- the probability of having social contacts (exposure);
- the probability of being infected through contacts (susceptibility);
- the probability of transmitting COVID-19;
- the probability of having symptomatic illness;

- the probability of developing severe illness and of being hospitalized;
- the probability of dying;
- the probability of experiencing medium- and long-term effects after a COVID-19 infection;
- the probability of experiencing unequal effects of public policies (e.g., lockdowns); and
- the probability of experiencing unequal socioeconomic consequences.

3.3 Social contacts and exposure

The intensity of social contacts is probably lowest among infants and young children who stay home with their parent(s) or caretaker(s), and among the elderly who live alone without permanent caregivers. The intensity is generally higher in public transportation than in individualized transportation, and is usually higher in the workplace than in the home. People's social contact levels vary depending on their household and family size and their kinship ties. The intensity of social contacts tends to be higher in kindergartens and schools, in nursing homes and hospitals, and among young adults and highly social people.

If the number of social contacts a person has increases the risk of contracting COVID-19, does having a lower class or social status also increase a person's risk? The intensity of social contacts (conviviality, going out for dinner and to cultural events, participating in costly sports like skiing) may be a status asset, especially if it is dependent on economic resources. For example, a manager may have contacts with multiple employees. Although having higher social status might increase an individual's exposure to risk via contacts, this is not always the case. Higher status individuals are more likely to travel to work by car than by public transportation. If they are eating out, they tend to dine in less crowded places. If they live in large families, they typically live in larger houses or apartments. By contrast, lower class individuals, and especially those living in migrant families, might have closer kinship ties, and thus more social contacts.

When examining the relationship between social class and social contacts, we should also consider people's situations before and during the pandemic lockdowns. Obviously, all members of occupational groups who directly interact with infected individuals, like ambulance drivers, hospital workers and doctors in private practice, have a much higher risk of contracting COVID-19. After the lockdowns, members of higher status groups could more easily employ a strategy of "contact thinning." Many could, for example, use private cars instead of public transportation, or continue working from home (while enjoying spacious and comfortable conditions). By contrast, people working as parcel deliverers had higher numbers of contacts. The available empirical evidence shows that after the lockdowns ended, members of higher income groups were able to reduce their spatial mobility more than members of lower income groups ([Chang et al., 2021](#)), and were more likely to be able to work from home ([Kohlrausch et al., 2020](#)).

3.4 Infections given contacts (susceptibility)

By November 2020, around 2% of adults in Germany had been infected with COVID-19 (Hoebel et al., 2021). It has been estimated that of the people who are infected, 80% have only mild symptoms (Rommel et al., 2021), 10–20% become ill and have more acute symptoms, 5% are hospitalized and 1% need intensive treatment. As new mutations continue to be reported, it is expected that almost everybody in a given population will eventually become infected (Drosten, 2021).

There is very little systematic evidence about the social factors that influence the probability of contracting COVID-19 based on the intensity of social contacts (Wachtler et al., 2020a; Zelner et al., 2021). Hoebel et al. (2021) conducted a seroepidemiological study in Germany, and found that people with lower levels of education and vocational training had higher rates of infection. Survey data collected up to spring 2021 show that the incidence of infection was 7% for lower social groups, 5% for middle social groups and 3% for higher social groups (Corona Datenplattform, 2021, p. 26). Compliance with social distancing and hygiene rules might be related to better access to and acceptance of health information, and thus to higher education. Compliance with social distancing norms is probably related to social status in a curvilinear manner: i.e., it is lower at the bottom and at the top and is higher in the middle. Deviance from social norms appears to be sanctioned more by those who can gain status by extending state authority, who are often assumed to belong to the lower middle classes. At least at the beginning of the COVID-19 crisis, access to disinfection materials, masks (especially FFP2 masks) and COVID-19 tests was costly, and was therefore subtly related to disposable income.⁴

Bambra et al. (2021, p. 15) summarized different facets of social status inequalities in the impact of COVID-19 pandemic in England: "...45% of patients admitted to hospital with COVID-19 were from the most deprived 20% of the population. COVID-19 admissions to critical care were also far greater in the most deprived areas, with over 50% of admissions coming from the 40% most deprived areas. A study of primary-care patients in England found that people living in deprived areas were more likely to test positive for COVID-19. Likewise, wide-scale analysis of positive cases by Public Health England (PHE) (from 1 March to 9 May 2020) found that diagnosis rates were highest in the most-deprived quintile (over 300 cases per 100,000), for both men and women – almost double that of the least-deprived quintile (around 200 cases per 100,000). Indeed, the rate in the most-deprived quintile was 1.9 times the rate in the least-deprived quintile among men, and 1.7 times among women" (Bambra et al., 2021, p. 15).

⁴ For the "effects" of social capital (as measured by participation levels in the prior EU election) in seven Western European countries, see Bartscher et al. (2020). Very early in the pandemic, high social capital levels were positively correlated with infections per capita. Between mid-March and mid-May 2020, social capital slowed the increase in infections, but after the introduction of lockdown measures, there were few differences between high and low social capital regions.

The elderly, and nursing home residents in particular, are a special case. It has been estimated that in the first wave of the pandemic, between one-third and one-half of all deaths linked to COVID-19 happened in nursing homes. A survey conducted in Germany in spring 2020 of people aged 80 or older found that 20% of respondents living in nursing homes reported that they were “ill” from COVID-19, compared to only 4% of respondents living in private homes (Hansen et al., 2021). The connection to social class operates via the fact that in many countries, the probability of living in a nursing home not only varies greatly, it is also socially selective. Bernardi et al. (2020) showed in a study based on SHARE survey data from 13 countries that the likelihood of living in a nursing home is much higher for people with lower education; and that the probability of living in a nursing home is higher in Scandinavian countries and in France and Belgium, while it is lower in Italy. However, the risk of contracting COVID-19 has been especially high in (northern) Italian multigenerational families, and this pattern may be inversely related to class (Balbo et al., 2021). British newspapers reported that nurses from the Philippines were several times more likely to contract the disease than nurses with British citizenship. It is unclear whether this was because the Filipino nurses had different areas of activity or worse access to protective gear, or because of other factors.

Another special case is that of workers in large slaughterhouses, among whom very severe outbreaks of the disease occurred. Their high rates of COVID-19 infection have been attributed to their cramped working and living conditions. The contributions of international travel and of private and informal care arrangements to these outbreaks are less well documented, but likely also accelerated the transmission of the disease.

Social epidemiology has generated overwhelming evidence that adverse social and economic conditions have an impact on health (ALLEA, 2021; Mackenbach, 2019). However, there is less consensus on the mechanisms that underlie this relationship (health information, nutrition, risky behavior), in part because they differ depending on the disease. It is well established that certain health conditions, including obesity, diabetes, high blood pressure, asthma, alcohol consumption, smoking and high cholesterol, are related to social class and status, whereas mental disorders are less closely related to class. It has been shown that the health conditions in this first category are also associated with higher rates of COVID-19 infection (even after accounting for the higher vulnerability of the elderly). This causal connection therefore provides the most important bridge to understanding the impact of social class on the risk of contracting COVID-19.

The differential infection rates of highly exposed occupational groups also represent a crucial bridge to capturing the relationship between COVID-19 infections and socioeconomic inequalities. Compared to the average risk for all occupational groups, kindergarten teachers have a threefold risk of infection, while nurses in hospitals and care homes, medical doctors and bus drivers have a twofold risk of contracting COVID-19 (AOK, 2021).

3.5 Access to medical care

In societies with comprehensive health insurance coverage like Germany or Austria, or with national health systems like the UK and the Scandinavian countries, access to hospitalization and intensive care for COVID-19 patients, and the quality that care, should not be related to the patients' social class or income. While both access to care and the quality of care are likely to be lower in rural than in urban areas, these disadvantages might be offset by the lower population density, and thus the lower likelihood of having contact with infected individuals, in the countryside (Goujon et al., 2021). The lower infection rates in some German federal states like Mecklenburg-Vorpommern, and the higher infection rates in city states, might be circumstantial evidence that this is indeed the case. However, this pattern might also be due to differential rates of testing. But even in a national health system like that in the UK, it has been shown that the quality of hospital care and the likelihood of dying from COVID-19 vary between areas with different economic conditions. For example, Dowd et al. (2020) found evidence of variation in the quality of care even within England and Wales.

In a study based on a large-scale sample of health insurance records for Germany, Wahrendorf et al. (2021) found that being short-term unemployed had a large impact on the likelihood of being hospitalized for COVID-19 (odds ratio of 1.34), and that being long-term unemployed had a massive impact (odds ratio of 1.74). They also found that receiving special benefits from social assistance was associated with higher rates of hospitalization (odds ratio of 1.21).⁵

3.6 Differential mortality

The penultimate criterion for assessing the impact of social inequalities on the risk of contracting COVID-19 is the question of whether individuals of a lower status or class, or who are in an underprivileged position, are more likely to die than individuals of a higher social status. This is, of course, not to deny the possibility that the likelihood of developing long-term and severe ailments after a COVID-19 infection might also be subject to social selectivity. At the onset of the pandemic, the likelihood of dying from COVID-19 was higher in the socioeconomically advantaged regions of Germany, but this gradient quickly reversed after April 2020. In the socioeconomically most deprived areas, COVID-19-related deaths were 70% more frequent among men and 50% more common among women than they were in the least disadvantaged areas (Wachtler et al., 2020b; RKI, 2021).

⁵ Initial cross-country analyses using SHARE survey data seem to indicate that there were marked inequalities in the access to medical treatment, as well as differential consequences of health behavior; see the presentation of Axel Börsch-Supan at the WZB Berlin Social Science Center Corona Colloquium on March 17, 2021.

Similar results have been documented for England: “In the early phase of the pandemic . . . the death rate in the 20% most-deprived English neighborhoods were 128.3 deaths per 100,000 compared to 58.8 deaths per 100,000 in the least-deprived 20%. Even in the summer of 2020, when the death rates in all areas fell considerably, they were still double in the most-deprived at 3.1 deaths per 100,000 versus 1.4 deaths per 100,000 in the least-deprived neighbourhoods . . .” (Bambra et al., 2021, p. 16).

In an excellent and highly informative study on differential mortality based on Swedish registry data (Drefahl et al., 2020) covering deaths between March 13 and May 20, 2020, Drefahl and colleagues analyzed differential mortality not only from COVID-19, but also from all other causes. Their results indicated that divorced and never married men faced a higher risk of dying from COVID-19 than married men. For all these groups, the magnitude of the risk of dying from all causes was about the same as the risk of dying from COVID-19, but men with secondary education had a relatively higher risk of dying from COVID-19 than from all other causes. Migrant men and women from low-income countries, who generally had a lower mortality risk, were more than twice as likely to die from COVID-19 than their non-migrant counterparts. This risk was especially pronounced for migrant men from Middle Eastern countries. Individuals with lower incomes had a higher risk of dying from COVID-19 and elevated all-cause mortality. However, COVID-19-related deaths were relatively less frequent than deaths from all causes among the lowest income group. Non-married women had a higher mortality risk than married women, but their relative risk of dying from COVID-19 was even higher. Less educated women had an elevated risk of dying from all causes, and an even higher risk of dying from COVID-19: “We demonstrate that being male, having less individual income, lower education, not being married all independently predict a higher risk of death from COVID-19 and from all other causes of death. Being an immigrant from a low- or middle-income country predicts higher risk of death from COVID-19 but not for all other causes of death. The main message . . . is that the interaction of the virus causing COVID-19 and its social environment exerts an unequal burden on the most disadvantaged members of society” (Drefahl et al., 2020, p. 2).⁶

3.7 Unequal effects of COVID-19-related policy measures

The COVID-19 pandemic has affected people’s lives in a variety of ways. In response to the pandemic, governments imposed restrictions on mobility, and many people were subject to voluntary or involuntary quarantines and lockdowns. During the pandemic, education and training were disrupted; transitions into and

⁶ See also Andrasfay and Goldman (2021) for differential COVID-19-related reductions in life expectancy in the U.S. for Blacks, Latinos and Whites; and Goujon et al. (2021) for regional characteristics of excess mortality. For an inverse income gradient in Belgian COVID-19 mortality, see Gadeyn et al. (2021).

across the labor market were greatly reduced; and there were large-scale furloughs, reductions in working hours and employment losses. Depending on the relative cushions provided by the welfare states in various countries, the pandemic has led many people to experience considerable losses of income from work, as well as the depletion of their savings. Since COVID-19 mortality hit the elderly and the very elderly disproportionately hard, many inheritances have been passed down to surviving children “prematurely.” The restrictions on international travel have blocked or greatly reduced labor migration, the migration of seasonal workers and international student exchanges.

While only a minority of people within a given population have suffered from COVID-19 symptoms, and even fewer people have been hospitalized or died during the pandemic, everybody has suffered from the consequences of restrictions on mobility and economic activity. Large shares of the population have been exposed to the risk of unemployment, reduced working hours and income losses (Möhring et al., 2020; Naumann et al., 2020). It is quite plausible that a process of polarization occurred between the groups who were almost completely protected, like pensioners, civil servants and public sector employees; and the groups who lost all of their ordinary income, like illegal care workers from Eastern Europe, “minijobbers” with marginal income, workers without unemployment insurance protection and individual entrepreneurs in the retail and restaurant industries. In between these groups were the workers who were forced to accept short hours, and whose labor income was reduced by 60–80%.

Studies that looked at the early phases of the COVID-19 crisis give important hints about the social distribution of its impact. In the early months of the pandemic in 2020, only one-fifth of the population in Germany reported a loss of income, and the likelihood of losing income varied greatly between people in different categories of disposable household income. While the imposition of short hours did not vary between income groups, it did vary between workers with different levels of education. Workers with lower education were twice as likely as their higher educated counterparts have their working hours reduced (Schröder et al., 2020). Kohlrausch et al. (2020) reported that about one-third of all households experienced income losses, arranging from one-half of households in the lowest income group to one-quarter of households in the highest income group. In sharp contrast to these findings, two prominent German research institutes, ifo and IAB, have reported an average reduction in gross income of only 3%, ranging from 4% for households in the lowest income decile to 3% for households in the highest income decile. Due to massive public transfers, the average reduction in net household income was around 1.1%, with families in the lowest income deciles even enjoying a slight increase in income, mainly because they were receiving the so-called “child bonus” (*Kinderbonus*) allowance, which was designed to support families during the COVID-19 crisis (Bruckmeier et al., 2020).

4 The (potential) effects of the COVID-19 crisis on life courses

How will the COVID-19 pandemic shape life transitions, trajectories, turning points and other life outcomes? Very early in the pandemic, a group of well-known scholars in the area of life course research systematically explored the potential impact of COVID-19 on people's life courses (Settersten et al., 2020). In particular, they looked at the impact on health, on personal control and planning, on social relationships and family, on education and training, on work and careers, and on migration and mobility. When examining the effects of the pandemic on health, personal planning and social relationships, these scholars concentrated on evidence of the immediate impact, like the age distribution of infections and deaths, reports of feeling a loss of control, and the impact of distancing and lockdowns on social contacts. But the more challenging questions are how the pandemic will affect later life outcomes, and whether there will be "pandemic cohorts" who are scarred for the rest of their lives.

To address these issues, we cannot rely on current observations, but must instead draw on our knowledge of comparable emergencies that occurred in the past. What theoretical models and approaches do we have to answer the question of how COVID-19 might affect people's life courses?

The COVID-19 pandemic could be described as a "critical life event." It was unexpected; it was associated with loss (of social contacts, employment, loved ones); and it was largely "uncontrollable." The literature on the impact of critical life events has shown that people who are exposed to such events can experience deep shocks, but it has also reported that the impact on individuals of events like divorce or the death of a child or a spouse is often temporary, lasting to up to about one year.

Some scholars have also argued that there are "sensitive periods" (Blossfeld, 1989) of life during which critical life transitions typically take place. The underlying assumption of this perspective is that certain transitions should be managed within a given age range or in specific life phases, and that if they are not, individuals are likely to experience long-term negative effects. Such transitions may include completing a certain level of education or training (e.g., by passing an exam), entering a qualification period, transitioning to the labor market, or having a child before the onset of infecundity.

The adaptation of individuals to the consequences of the COVID-19 pandemic might be age-specific in the sense that the amount of time remaining in, for example, a person's working life might have huge consequences for the individual's ability to adjust by retraining or starting a new career.

The combination of "sensitive" and "historical" periods produces cohort effects. The collective experience of exposure to adverse conditions at a given age can distinguish birth cohorts from each other. These experiences include, for instance, being affected by budget shortfalls that hinder young people's opportunities to enter the civil service or advance in their career within an organization. The COVID-19 pandemic might produce not just age-specific cohort effects, but even "generations"

of the kind described by Karl Mannheim (1928): i.e., age groups whose attitudes and values differ, but who are developing something like a collective consciousness of “before” and “after” the pandemic, and of how it has affected certain birth cohorts (and groups within them) in specific ways. Some sociologists (Bude, 2020) have already speculated about the emergence of a new sense of solidarity and a higher level of trust in the state, and about the demise of neoliberalism.

However, when we are discussing the negative effects the pandemic is expected to have on people’s life courses, we should also consider the “counter-hypothesis” that there will be no such long-term negative effects. In line with the theory of critical life events, the impact of the pandemic might be large but temporary. If the duration of mobility restrictions, unemployment and income losses is relatively short, then the impact of the pandemic might be relatively small. This is especially likely to be the case if, for instance, income losses are compensated for by policies such as higher unemployment insurance benefits or subsidies for workers with temporarily reduced working hours (*Kurzarbeit* schemes). Missed exams or other education and training accreditations can be made up. Transitions such as starting training, entering the labor market, switching jobs or making career advances may just be delayed, without having any longer-term adverse effects.

The long-term impact of the pandemic will largely depend on how disruptive the economic shocks on both the demand and the supply side will prove to be, and on how states balance their efforts to claim new powers to regulate and control with efforts to mitigate the economic consequences of the pandemic through measures aimed at compensating workers for income losses. We also know from the theory of stress and coping that when adverse events are shared by many or even all people, the individual consequences are less severe, especially if people do not have to attribute the adverse events to their own actions.

Are there historical precedents that would be useful to consider when discussing the potential impact of the COVID-19 pandemic on people’s life courses? We have some evidence on how large-scale epidemics affected the long-term life courses of the populations involved. Understanding the impact of the Spanish flu, which resulted in 40–60 million deaths worldwide, is difficult because the effects of the pandemic were closely intertwined with the economic and political upheaval at or after the end of World War I (WWI). However, Mamelund (2004) has shown for Norway, which was neutral in WWI, that the flu pandemic had a positive impact on fertility, with a post-pandemic baby boom occurring in 1920.

Other historical developments, such as those covered by the German Life History Study (Mayer, 2015), might give us some insight into what the effects of the COVID-19 pandemic on life courses might be.

When we examined the impact of World War II (WWII) on people’s life courses in Germany, we expected to find that the war greatly disrupted people’s lives, as many men served in the military for long periods of time, and some were held as prisoners of war for up to 13 years (from 1939/40 to the return of the last prisoners of war from Russia in 1953). To our surprise, this is not what we found. Instead, our analysis showed that the cohorts most hurt by WWII were those born around

1930/1931. Indeed, despite experiencing the “economic miracle” of the 1950s and 1960s, these cohorts never caught up, and were disadvantaged in their occupational lives and in retirement. This is likely because these cohorts missed a critical life transition: namely, the transition to an apprenticeship just after the end of the war. Thus, these cohorts had the largest proportions of unskilled workers ever observed in the German context (Mayer, 1988).

The potential adverse long-term effects of experiencing difficult conditions might be prevented if they are addressed through political debate and political measures. A good example of such a case was the West German government’s response to the problems the baby boomers born around 1964 faced in getting an apprenticeship. Through a joint political campaign of the federal government and the employer associations, many additional apprenticeships were created. However, less political attention was paid to helping these now large cohorts of young women and men who were finishing apprenticeships transition to the labor market. This lack of political action, in combination with a less favorable business cycle, led to this cohort having particularly high levels of unemployment during this transition phase (Hillmert and Mayer, 2004). However, in contrast to the German cohort born around 1930, the 1964 cohort fully recovered across their working lives (Manzoni et al., 2014), most likely due to their solid educational and vocational training resources.

The age-specific impact of disruptive events has been clearly demonstrated by a number of studies that examined the consequences of the economic meltdown and the mass unemployment that occurred in the course of German unification. While young people who had already mostly completed their occupational training periods did surprisingly well in the transition, people who were over age 55 were pushed out of work altogether, and people who were between ages 45 and 50 had high levels of unemployment or state-provided employment because their remaining working lives were too short to allow them to start from scratch (Diewald et al., 2006; Mayer and Schulze, 2009).

Several studies have documented the impact of the Great Recession (2007-2009) on young people’s transitions to the labor market (Schoon and Bynner, 2017). Very few of these studies were able to compare the experiences of these cohorts before, during and after the Great Recession, and the period since the downturn ended has been too short to allow for an analysis of the longer-term cohort effects. Blossfeld (2017) found no evidence that the Great Recession had an impact on shorter-term unemployment, on wages or on downward career mobility among workers in Germany.

There are, however, two areas in which we can currently make empirical observations about the likely effects of the COVID-19 crisis on young people’s subsequent life courses: schooling deficits and problems in the vocational training market.

Grewenig et al. (2020) and Woessmann (2020) have estimated that in the fall of 2020, about one-third of a school year had been lost in Germany due to the closing of schools in the spring. On average, pupils reduced their daily learning time of 7.4 hours by about half, and the reductions were larger for low achievers (4.1 hours)

than for high achievers (3.7 hours). Based on these findings, the studies concluded that the lifetime labor income of these young people will likely be reduced by 3–4%.⁷ To arrive at this estimate, Grewenig and co-authors ingeniously used evidence from four sources: wage differences between individuals based on the number of years of schooling they completed, the natural experiment of halving the length of the school year due to the beginning of the school year having been moved in the 1960s in West Germany from the spring to the fall, the “summer gap” in learning that has been well-documented for the U.S. (and differentiated by race) and the fallout from teacher strikes. Meanwhile, Woessmann and his co-authors conducted their own surveys and systematically reviewed the German and the international evidence ([Werner and Woessmann, 2021a, 2021b](#)). Based on their findings, the authors reached the following conclusion: “There is clear evidence that the COVID-19 pandemic seriously impeded the cognitive and socio-emotional development of many children.” The study also found that children with more disadvantaged socioeconomic backgrounds suffered more than children with more advantaged backgrounds ([Werner and Woessmann, 2021b](#), pp. 33–40).

With regard to the impact of the COVID-19 crisis on vocational training, strong concerns were raised that the pandemic would greatly undermine the supply of traineeships offered by firms, and the whole process of matching applicants to training opportunities. In Germany, the number of apprenticeship contracts fell by 11% in 2020, and improved only marginally in 2021. This adverse development might have been offset by the fact that the overall size of the cohort (i.e., the number of potential applicants) declined. Another factor, which has also been observed in earlier crises, seems to have contributed to current trends as well: i.e., more young people decided to stay in school, which may lead to improvements in the average qualification levels of the “COVID-19 generation” ([Bundesagentur für Arbeit, 2021](#)).

5 Outlook

In this paper, I have reviewed some of the potential and actual contributions of sociology to understanding the causes and the consequences of the COVID-19 crisis. Given the dynamic (and sometimes even counterintuitive) nature of many the effects of the COVID-19 pandemic, a large degree of caution is needed when considering these issues. For instance, while levels of trust in government were very high during the early months of the pandemic, they now appear to be eroding rapidly. Similar changes in the economic and labor market effects of the pandemic are even more likely to occur.

There have been substantial sociological insights and reliable research results on the COVID-19 pandemic in some subfields, such as research on the emergence of

⁷ For the potential effects of home-schooling and possible remedies, see [Helbig \(2021\)](#).

and compliance with social norms, and the differentiation and new intermeshing of societal subsystems like family, work and politics. However, in other subfields, especially those that focus on social networks, the failure to provide useful knowledge on the diffusion of the pandemic is both surprising and worrying.

The almost hegemonic narrative of the COVID-19 crisis leading to a deepening and a polarization of inequalities turns out to be somewhat less convincing when we look more closely at the empirical evidence. Two lessons are, however, obvious. One is that inequalities must be carefully distinguished based on their impact on contacts, infections, treatments, mortality and the population-level consequences of COVID-19 policies. It even appears that there are some paradoxical and counterintuitive effects of inequalities, like the association between high status and numbers of social contacts. The types of inequality also seem to matter, with exclusion and discrimination based on migrant status having a greater impact than mere differences in income. Moreover, the redistributive impact of social policies appears to play an important role, such as in relation to reductions in working hours.

The other lesson is that the inferences made about the impact of socioeconomic inequalities must be closely connected to the underlying mechanisms. In this context, it is crucial to consider the role of occupational groups in shaping contacts, proximity, mobility, the likelihood of working from home and the risk of infection.

Regarding the impact of the COVID-19 crisis on people's life courses, the assumption that the pandemic will have severe negative effects is quite plausible. However, as historical analogies to the cohorts who experienced the effects of WWII, the baby boom and the Great Recession suggest, the final outcomes will not be known until long-term observations of the birth cohorts involved can be made.

In sum, while sociology offers a wealth of insights and hypotheses for understanding the COVID-19 crisis and its consequences, and there has already been an explosion of empirical research on this topic, a proper assessment of the effects of the pandemic will only be possible in the years to come.

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References

- ALLEA (2021). *Health inequalities research: new methods, better insights?* ALLEA-All European Academies.
- Andrasfay, T., and Goldman, N. (2021). Reductions in 2020 US life expectancy due to COVID-19 and the disproportionate impact on the Black and Latino populations. *Proceedings of the National Academy of Sciences*, 118(5). <https://doi.org/10.1073/pnas.2014746118>
- AOK (2021). Krankschreibungsanalyse der AOK Nordost Berlin, March 7, 2021.
- Balbo, N., Billari, F., and Melegaro, A. (2021). The strength of family ties and COVID-19. *Contexts*, Winter 2021, 18–25.
- Balbo, N., Kashnitsky, I., Melegaro, A., Meslé, F., Mills, M. C., de Valk, H. A. G., and Vono de Vilhena, D. (2020). *Demography and the coronavirus pandemic*. Population & Policy Compact 25, Berlin: Max Planck Society/Population Europe.
- Bambra, C., Lynch, J., and Smith, K. E. (2021). *The unequal pandemic. COVID 19 and health inequalities*. Bristol University Press Policy Press Short Insights.
- Bartscher, A. K., Seitz, S., Slotwinski, M., Sieglöcher, S., and Wehrhöfer, N. (2020). *Social capital and the spread of COVID-19: Insights from European countries* (CESifo Working Paper No. 8346). Leibniz-Institut für Wirtschaftsforschung. <https://ssrn.com/abstract=3623681>
- Beck, U. (1986). *Risk Society*. Suhrkamp.
- Bernardi, F., Cozzani, M., and Zanasi, F. (2020). *Social inequality and the risk of being in a nursing home during the COVID-19 pandemic*. SocArXiv, <https://doi.org/10.31235/osf.io/ksefy>
- Blau, P. M. (1977). *Inequality and heterogeneity*. Glencoe: Free Press.
- Block, P., Hoffmann, M., Raabe, I. J. *et al.*, (2020). Social network-based distancing strategies to flatten the COVID-19 curve in a post-lockdown world. *Nature Human Behavior*, 4, 588–596. <https://doi.org/10.1038/s41562-020-0898-6>
- Blossfeld, H.-P. (1989). *Kohortendifferenzierung und Karriereprozeß*. Campus.
- Blossfeld, P. N. (2017). Labor market entry in Germany before and after the financial crisis. An analysis of duration of labor market entry, quality of first job, and fixed-term employment. In I. Schoon and J. Bynner (Eds.), *Young People's Development and the Great Recession. Uncertain Transitions and Precarious Futures* (pp. 208-232). Cambridge University Press.
- Bruckmeier, K., Peichl, A., Popp, M., Wiemers, J., and Wollmershäuser, T. (2020). *COVID-19-Krise: Für das Jahr 2020 ist mit keinem Anstieg der Einkommensungleichheit in Deutschland zu rechnen* (Ifo Schnelldienst 16). Leibniz-Institut für Wirtschaftsforschung.
- Brückner, H., and Bearman, P. (2005). After the promise: The STD consequences of adolescent virginity pledges. *Journal of Adolescent Health*, 36(4), 271–278. <https://doi.org/10.1016/j.jadohealth.2005.01.005>
- Bude, H. (2020). Verwundbarkeit macht solidarisch. *Tagespiegel*, April 4, 2020.
- Bundesagentur für Arbeit. (2021). *Arbeitsmarkt kompakt: Situation am Ausbildungsmarkt*. Nürnberg.

- Chang, S., Pierson, E., Koh, P. W., Gerardin, J., Redbird, B., Grusky, D., and Leskovec, J. (2021). Mobility network models of COVID-19 explain inequities and inform reopening. *Nature*, 589, 82–87. <https://doi.org/10.1038/s41586-020-2923-3>
- Chen, Y.-H., Glymour, M., Riley, A., Balmes, J., Duchowny, K., Harrison, R., Matthay, E., and Bibbins-Domingo, K. (2021). *Excess mortality associated with the COVID-19 pandemic among Californians 18–65 years of age, by occupational sector and occupation: March through October 2020*. MedRxiv. <https://doi.org/10.1101/2021.01.21.21250266>
- Christakis, N. (2020). *Apollo's Arrow. The profound and enduring impact of the Coronavirus on the way we live*. Little, Brown Spark.
- Corona Datenplattform. Infas. (2021). *Themenreport 0. Einschätzungen zum Pandemieverlauf – Möglichkeiten und Grenzen vorgestellt anhand von Mobilitätsdaten, Inzidenzdaten, Wirtschaftsdaten und innerstädtischer Analysen*. Retrieved May 2021. <https://www.corona-datenplattform.de/>
- Diekmann, A. (2020). Entstehung und Befolgung neuer sozialer Normen. Das Beispiel der Corona-Krise. *Zeitschrift für Soziologie*, 49(4), 236–249. <https://doi.org/10.1515/zfsoz-2020-0021>
- Diewald, M., A: Goedicke, A., and Mayer, K. U. (2006). *After the fall of the wall: Life courses in the transformation of East Germany*. Stanford University Press.
- Drefahl, S., Wallace, M., Mussino, E., Aradhya, S., Kolk, M., Brandén, M., Malmberg, B., and Andersson, G. (2020). *Socio-demographic risk factors of COVID-19 deaths in Sweden: A nationwide register study*. (Stockholm Research Reports in Demography 23). Stockholm University, Demography Unit. <https://doi.org/10.17045/sthlmuni.12420347.v2>
- Drosten, Ch. (2021). Wir werden wieder so leben wie vor der Pandemie. *Tagesspiegel*, 19 January 2021.
- Dowd, J. B., Andriano, L., Brazel, D. M., Rotondi, V., Block, P., Ding, X., Liu, Y., and Mills, M. C. (2020). Demographic science aids in understanding the spread and fatality rates of COVID-19. *Proceedings of the National Academy of Sciences*, 117(18), 9696–9698. <https://doi.org/10.1073/pnas.2004911117>
- FAZ (2022). Der Staat weiß zu wenig über die Geimpften. *Frankfurter Allgemeine Sonntagszeitung*, 16 January 2022.
- Gadeyne, S., Rodriguez-Loureiro, L., Surkyn, J., Van Hemelrijck, W., Nusselder, W., Lusyne, P., and Vanthomme, K. (2021). Are we really all in this together? The social patterning of mortality during the first wave of the COVID-19 pandemic in Belgium. *International Journal of Equity Health*, 20, Article 258. <https://doi.org/10.1186/s12939-021-01594-0>
- Goujon, A., Natale, F., Ghio, D., and Conte, A. (2021). Demographic and territorial characteristics of COVID-19 cases and excess mortality in the European Union during the first wave. *Journal of Population Research*. <https://doi.org/10.1007/s12546-021-09263-3>
- Grewenig, E., Lergetporer, P., Woessmann, L., and Zierow, L. (2020). COVID-19 and Educational Inequality: How School Closures Affect Low- and High-Achieving Students. (CESifo-Working Paper No. 8648). Leibniz-Institut für Wirtschaftsforschung.
- Hansen, S., Schäfer, N., and Kaspar, R. (2021). D 80+ - Hohes Alter in Deutschland. (Kurzberichte Nr. 1) Ceres – Center for Ethics, Rights, Economics and Social Sciences of Health.

- Helbig, M. (2021). Lernrückstände nach Corona – und wie weiter? *Die Deutsche Schule, Beiheft, 18*, 127–146.
- Hillmert, S., and Mayer, K. U. (2004). *Geboren 1964 und 1971. Neuere Untersuchungen zu Ausbildungs- und Berufschancen in Westdeutschland*. VS Verlag für Sozialwissenschaften.
- Hoebel, J., Busch, M. A., Grabka, M. M., Zinn, S., Allen, J., Gößwald, A., Wernitz, J., Goebel, J., Steinhauer, H. W., Siegers, R., Schröder, C., Kuttig, T., Butschalowsky, H., Schlaud, M., Schaffrath Rosario, A., Brix, J., Rysina, A., Glemser, A., Neuhauser, H., . . . Lampert, T. (2021). Seroepidemiologische Studie zur bundesweiten Verbreitung von SARS-CoV-2 in Deutschland: Studienprotokoll von CORONA-MONITORING bundesweit (RKI-SOEP-Studie). *Journal of Health Monitoring, 6*(S1), 2–17. <https://doi.org/10.25646/7852>
- Kohlrausch, B., Zucco, A., and Hövermann, A. (2020). *Verteilungsbericht 2020: Die Einkommensungleichheit wird durch die Krise noch weiter verstärkt*. WSI-Wirtschafts- und Sozialwissenschaftliches Institut.
- Leopoldina. (2020). Dritte Ad-hoc-Stellungnahme: Coronavirus-Pandemie – Die Krise nachhaltig überwinden. Halle/Saale. 13 April 2020.
- Lianos, M. (Eds.) (2021) European societies in the time of the coronavirus crisis. [Special issue] *European Societies, 23*, Supplement 1.
- Mackenbach, J. P. (2019). *Health inequalities. Persistence and change in European welfare states*. Oxford University Press.
- Mamelund, S.-E. (2004). Can the Spanish Influenza pandemic of 1918 explain the baby boom of 1920 in neutral Norway. *Population, 59*(2), 229–260.
- Mannheim, K. (1928). Das Problem der Generationen. *Kölner Vierteljahreshefte für Soziologie, VII*:157-185, 309-329.
- Manzoni, A., Härkönen, J., and Mayer, K. U. (2014). Moving on? A growth-curve-analysis of occupational career progression patterns in West Germany. *Social Forces, 92*, 1285–1312. <https://doi.org/10.1093/sf/sou002>
- Mayer, K. U. (1988). German survivors of World War II. The impact on the life course of the collective experience of birth cohorts. In M. W. Riley, B. J. Huber, and B. B. Hess, (Eds.), *Social structures and human lives (Social Change and the Life Course, Volume 1)* (pp. 229-246). Sage.
- Mayer, K. U. (2015). The German Life History Study: An introduction. *European Sociological Review, 31*, 137–143.
- Mayer, K. U., and Schulze, E. (2009). *Die Wendegeneration. Lebensverläufe des Jahrgangs 1971*. Campus.
- Meyers, L. A., Pourbohloul, B., Newman, M. J., Skrowonskiand, D. M., and Brunham, R.-C. (2005). Network theory and SARS: predicting outcome diversity. *Journal of Theoretical Biology, 232*, 71–81.
- Möhring, K., Naumann, E., Reifenscheid, M., Blom, A. G., Wenz, A., Rettig, T., Lehrer, R., Krieger, U., Juhl, S., Friedel, S., Fikel, M., and Cornesse, C. (2020). Inequality in employment during the Corona lockdown: Evidence from Germany. *Journal of European Social Policy: European Social Policy Blog*, 10 July, 2020. <https://jesp.eu/2020/07/>
- Mossong, Jo. I., Hens, N., Jit, M., Beutels, P., Auranen, K., Mikolajczyk, R., Massari, M., Salmaso, S., Tomba, G. S., Wallinga, J., Heijne, J., Sadkowska-Tody, M., Rosinska, M.,

- and Edmunds, W. J. (2008). Social contacts and mixing patterns relevant to the spread of infectious disease. *PLOS Medicine*. <https://doi.org/10.1371/journal.pmed.0050074>
- Nassehi, A. (2020). Die Infektion der Gesellschaft. In der Krise marschiert man gern kollektiv. Das hält aber nicht lange. *Tagesspiegel*, 11 April 2020.
- Naumann, E., Möhring, K., Reifenscheid, M., Wenz, A., Rettig, T., Lehrer, R., Krieger, U., Juhl, S., Friedel, S., Fikel, M., Cornesse, C., and Blom, A. G. (2020). COVID-19 policies in Germany and their social, political, and psychological consequences. *European Policy Analysis*, 2020(6), 191–202. <https://doi.org/10.1002/epa2.1091>
- Opp, K.-D. (2001). Norms. In N. Smelser and P. B. Baltes (Eds.) *International encyclopedia of the social and behavioral sciences*. (Vol. 16) (pp.10714–10720). Pergamon.
- RKI (2021). *Faktenblatt zu sozialen Unterschieden in der COVID-19-Sterblichkeit*. Robert-Koch-Institut, 16 March 2021.
- Rommel, A., von der Lippe, E., Treskova-Schwarzbach, M., and Scholz, S. (2021). Population with increased risk of severe COVID-19 in Germany. *Journal of Health Monitoring*, 6-S2, 1–15.
- Schoon, I., and Bynner, J. (Eds.) (2017). *Young people's development and the Great Recession. Uncertain transitions and precarious futures*. (pp. 208–232). Cambridge University Press.
- Schröder, C., Entringer, T., Goebel, J., Grabka, M. M., Graeber, D., Kröger, H., Kroh, M., Kühne, S., Liebig, S., Schupp, J., Seebauer, J., and Zinn, S. (2020). Vor dem COVID-19-Virus sind nicht alle Erwerbstätigen gleich. (*DIW-Wochenbericht* Nr. 41). Deutsches Institut für Wirtschaftsforschung.
- Settersten Jr., R., Bernardi, L., Härkönen, J., Antonucci, T. C., Dykstra, P. A., Heckhausen, J., Kuh, D., Mayer, K. U., Moen, P., Mortimer, J. T., Mulder, C. H., Smeeding, T. M., van der Lippe, T., Hagestad, G. O., Kohli, M., Levy, R., Schoon, I., and Thomson, E. (2020). Understanding the effects of COVID-19 through a life course lens. *Advances in Life Course Research*, 45, 100360. <https://doi.org/10.1016/j.alcr.2020.100360>
- Smith, K. P., and Christakis, N. A. (2008). Social networks and health. *Annual Review of Sociology*, 23, 205–429.
- Spinney, L. (2017). *Pale Rider. The Spanish Flu of 1918 and how it changed the world*. Jonathan Cape.
- Sydenstricker, E. (2006). The incidence of influenza among persons of different economic status during the epidemic of 1918. *Public Health Reports*, 121(Supplement 1), 191–204. (Original published 1931 in *Public Health Reports*, 46(4), 154–170.)
- Tilly, C. (1999). *Durable inequality*. University of California Press.
- Tooze, A. (2020). The sociologist who could save us from the virus. *Foreign Policy*, 1 August 2020.
- Tooze, A. (2021). *Shutdown. How COVID shook the world's economy*. Allen Lane.
- Ullman-Margalith, E. (1977). *The emergence of social norms*. Clarendon Press.
- Wachtler, B., Michalski, N., Nowossadeck, E., Dierke, M., Wahrendorf, M., Santos-Hövenner, C., Lampert, T., and Hoebel, J. (2020a). Sozioökonomische Ungleichheit und COVID-19 – Eine Übersicht über den internationalen Forschungsstand. *Journal of Health Monitoring*, 5(S7), 3–18. <https://doi.org/10.25646/7058>
- Wachtler, B., Michalski, N., Nowossadeck, E., Dierke, M., Wahrendorf, M., Santos-Hövenner, C., Lampert, T., and Hoebel, J. (2020b). Sozioökonomische Ungleichheit im

- Infektionsrisiko mit SARS-CoV-2 – Erste Ergebnisse einer Analyse der Meldedaten für Deutschland. *Journal of Health Monitoring*, 5(S7), 19–31. <https://doi.org/10.25646/7056>
- Wahrendorf, M., Rupprecht, C. J., Dortmann, O., Scheider, M., and Dragano, N. (2021). Erhöhtes Risiko eines COVID-19-bedingten Krankenhausaufenthaltes für Arbeitslose: Eine Analyse von Krankenkassendaten von 1, 28 Mio. Versicherten in Deutschland. *Bundesgesundheitsblatt-Gesundheitsforschung-Gesundheitsschutz*, 64(3), 314–321.
- Werner, K., and Woessmann, L. (2021a). The legacy of COVID-19 in education. (CESifo Working Paper No. 9358). Leibniz-Institut für Wirtschaftsforschung.
- Werner, K., and Woessmann, L., (2021b). Will the COVID-19 pandemic leave a lasting legacy in children’s skill development. CESifo Forum 6/2021, 33–40.
- Wissenschaftszentrum Berlin für Sozialforschung (2020/21). Soziologische Perspektiven auf die Corona Krise. <https://coronasoziologie.blog.wzb.eu/archiv/>
- Woessmann, L. (2020). Folgekosten ausbleibenden Lernens: Was wir über die Coronabedingten Schulschießungen aus der Forschung lernen können. *ifo-Schnelldienst*, 6, 38–44.
- Zelner, J., Masters, N., Naraharisetti, R., Mojola, S., and Chowkwanyun, M. (2021). *There are no equal opportunity infectors: Epidemiological modelers must rethink our approach to inequality in infection risk*. Princeton University Preprint.

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