Karl Ulrich Mayer

Notes on a Sociology of the COVID-19 Pandemic

WITTGENSTEIN CENTRE CONFERENCE 2020
DEMOGRAPHIC ASPECTS OF THE COVID-19 PANDEMIC
AND ITS CONSEQUENCES  Wien, Dec 1-2
structure of my talk

• my own *contagions* with the pandemic

• the toolbox of sociology: questions about Covid-19

• social inequalities: causes, contexts and consequences of the pandemic

• life course: proximal and distal effects

• (families, schools and work places)
Dritte Ad-hoc-Stellungnahme:

Coronavirus-Pandemie – Die Krise nachhaltig überwinden

13. April 2020
Understanding the effects of Covid-19 through a life course lens

Richard A. Settersten Jr. a, *, Laura Bernardi b, Juho Häkönen c, Toni C. Antonucci d, Pearl A. Dykstra e, Jutta Heckhausen f, Diana Kuh g, Karl Ulrich Mayer h, Phyllis Moen i, Jeylan T. Mortimer j, Clara H. Mulder k, Timothy M. Smeeding l, Tanja van der Lippe m, Gunhild O. Hagestad n, Martin Kohli o, René Levy p, Ingrid Schoon q, Elizabeth Thomson r
Forschung für die gewonnenen Jahre
Zukunft der Alterns- und Lebensverlaußforschung in Deutschland
the analytical toolbox of sociology

• social action and social norms
• social relations and social networks
• social structure and social inequalities
• life courses and social change
• social systems and systems differentiation: institutions and subsystems
• culture, knowledge and science

intersections with demography?
questions about Covid-19

• What are conditions of the emergence and acceptance of social norms? Which role play purposive /rational vs expressive/symbolic action

• What do we know about social networks and their consequences for contacts and infection?

• Are all equal in the face of Covid 19? Is Covid 19 a leveller or driver of social inequalities? What are potential midterm and longterm effects on individual lives?

• How do the relative weights and relations between markets, state and civil society change during and after the crisis? Schools, families and work places

• What are prototypical “trajectories” of pandemics?

• Which cultural schemata determine our perceptions of and coping with the pandemic?

• Social anomie or collective orientation?
questions about Covid-19

what are conditions of the emergence and acceptance of social norms? which role play purposive /rational vs expressive/symbolic action?

• transparency, universality, scientific grounding, voluntariness, social acceptance (Opp 2001)
• cooperation games (social distancing) vs coordination games (masks) (Diekmann 2017, 2020; Ullman-Margalith 1960)
• rational-instrumental vs expressive-symbolic behavior
questions about Covid-19

what do we know about social networks and their consequences for contacts and infection? (Smith/Christakis 2008; Moossong et.al. 2008;

• (Smith/Christakis 2008; Christakis/Fowler 2007; Brückner/Bearman 2005): social networks and health (smoking, obesity, STD) – spanning trees and clusters

• (Moosong et.al. 2008): social networks and infectious diseases

• Meyers et.al. (2005): network theory and SARS: predicting outbreak diversity
Social Contacts and Mixing Patterns Relevant to the Spread of Infectious Diseases

Joeël Mossong1,2*, Niel Hens3, Mark Jit4, Philippe Beutels5, Kari Auranen6, Rafael Mikolajczyk7, Marco Massari8, Stefania Salmaso8, Gianpaolo Scalia Tomba9, Jacco Wallinga10, Janneke Heijne10, Malgorzata Sadkowska-Todys11, Magdalena Rosinska11, W. John Edmunds4

• 7290 participants mit 97 904 Kontakten in 8 europäischen Ländern
Mossong et. al. 2008

- equal probability assumption in Covid-19 models
- contacts are highly age-distributed, especially high among school children and young adults

- contacts of 1 hour duration and longer or daily contacts tend to be physically closer, shorter and less frequent contacts tend to be less physically close.

- contacts at home, in school and in leisure time tend to be closer than contacts at work and while travelling

- very similar results across countries
Network theory and SARS: predicting outbreak diversity
Lauren Ancel Meyers, Babak Pourbohloul, M.E.J. Newman, Danuta M. Skowronska, Robert C. Brunham, Journal of Theoretical Biology 2005, 231-1:71-81
socio-economic inequalities: Corona as the great leveller
socio-economic inequalities Corona as the great leveller

Ulrich Beck: Risk Society (1986)

- „nature strikes back“ or man made risks?
- invisible risks
- risks as collective, unescapable fate
- beyond „social classes“, regions and nations
- no escape by one`s own efforts
- ambiguous role of science
socio-economic inequalities  Corona as the great leveller

Heinz Bude ( Tagesspiegel, April 2020)

• collective and equal exposure to infection risk and equally subject to anti-pandemic measures

• similar dependency on support on others and compliance of others

• equality vis-a-vis the health system

• all in the same boat :collective responsibility and acceptance of state measures
socio-economic inequalities and Corona

- inequalities and risk groups
- a typology of risks
- risk groups x risk types
- accentuation and compensation of risks (vulnerabilities and resilience)
- dimensions of inequalities: status, income, citizenship
groups at risk

2 axes

• socio-economic and socio-cultural differentiation
  (distributive relational, categorical). E.g. - income poverty, low position in social hierarchies, social exclusion)

• socio-demographic life situations: types of families and households, single parents, many children, divorce, widowhood, old age, multi-generation households
types of Corona risks

• probability of social contacts
  (exposure to risk 1) – sociology/ demography

• probability of infection given contact
  (exposure to risk 2) – serologie, virology, sociology

• probability of illness given infection, severity of illness (intensive care and intubation) (risk 3, coping with risk 2) – pneumonomology

• probability of mortality (coping with risk 3) - demography/epidemiology

• probability of medium and long term effects of Covid-19 (coping with risk 3) –

• social and economic Corona effects of public policy - lockdown, social distancing
p- social contacts (exposure to risk 1) – r (social status) ?

• lower: preKita Babies, old-non-nursing homes
• higher: travels, ÖPNV – public transport, (example Hohenlohe County) (Ruud Koopmans on border closures)
• higher: non-home office, personal
• household size
• social contacts, kinship contacts
• schools and Kitas
• conviviality: young adults (Carneval Heinsberg, Mardi Gras New Orleans, clubbing)
• nursing homes and social class: Italy`s multi-generational families
p (social contacts) –
(exposure to risk 1)

• before social distancing and lockdown measures: higher socio-economic resources, higher social integration and higher social support, forms of contact “thinning” (cars vs ÖNV, fast food vs upscale restaurants)

• after policy measures: occupational and private contact constraints, (home office)

• groups at risk: nursing homes, hospitals, ambulatory care services, groups without Internet, other personal services like supermarket cashiers, parcel deliverers
spatial mobility after lockdown measures U.S.

Chang et al (2020)

• significantly less reduction of spatial mobility among low income groups

• lower income groups have extrahousehold interactions with higher interaction density
P (infection given contact)

• physical contact: hospitals, nursing homes, ambulatory care
• social isolation and distancing, isolation, hand washing, masks, disinfection, protective clothing

• social factors of compliance
• access to and use of Covid-19 information
Meyers, L.A., B. Pourhohloul, et.al. (2005)
Network theory and SARS: predicting outbreak diversity. Journal of Theoretical Biology 232:71-81
p (and severity of illness and death)

• access to information (symptoms)
• access to medical practices / doctors
• access to tests
• access to high quality medical treatment

better with level of education, social status and proximity to urban centers

groups at risk: persons without kin, migrants in camps homeless, older people with multimorbidity, smokers, asthmatics, lung disease, dialysis patients
vulnerability - social epidemiology

social causes of health, illness and death

• protective mechanisms: social support and social relationships (e.g. marriage) – salutogenesis

• occupational stress and immune strength (Whitehall Study - SES (Marmot; Siegrist)

• socio-spatial segregation and toxic exposure (Wu, et.al. (2020) Exposure to Air Pollution and COVID-19 Mortality in the United States. https://www.mdrxiv.org/content/101101(2020.04.2005402v1 )

• reversal of trend of life expectancy (UK: Marmot 2020; U.S.: Case/ Deaton 2017/2020)

• consequences of economic stagnation and disruption:
  Lancet (2016): 2008 crisis, Brazil 1% unemployment leads to 0.5% higher mortality rate
coping with Covid-19 consequences

- medium and longterm effects of illness and treatment
- social isolation, family stress, domestic violence
- educational opportunities and digital divide: “home schooling”
- loss of income: short hours
- loss of wealth
- unemployment

- potentials of coping should be the higher, the higher the social, economic and socio-cultural resources
life courses in and after the Covid-19 crisis

• immediate impacts with negative long term consequences
• non-compensatible deprivations
  impairments of health: chronic illness and disability
  missed schooling (Woessmann et.al. 2020)
  impaired transitions to apprenticeships (Mayer 1977; Müller 1978)
  impaired transitions to completing qualifications
  impaired transitions from qualifications to employment (Hilmert/ Mayer 2004)
  labor market breakdown or attenuation (German unification: age specific effects of unemployment (Diewald/Goedicke/Mayer) 2004

temporary or persistent cohort inequalities?
path dependency or life course bump?
selected findings
socio-economic consequences of the pandemic

equalizing:
• wealth losses in shares (10 – 40%)
• analogy wars (Piketty 2018; Schield 2017; Wuest 2020)

accentuating:
• income maintenance for people with fixed incomes (public service, pensioners, renters of real estate)
• short hours
• unemployed
• solo-selfemployed

? 
• self-employed

expectation: increase of economic inequalities (analogy 2008)
Angus Deaton: Health and wealth inequality in America. How COVID-19 makes clear the need for change. U.S. Congressional Testimony, June 23, 2002

Mortality:

Afro Americans pre-COVID-19 18% higher than whites
   COVID 84% higher
Hispanics pre-COVID_19 lower, COVID-19 higher mortality than whites

Native Americans: Arizona 4% of population, 22% of deaths
   New Mexico. 9% of population, 50% of deaths
Wachtler, B. et al. (2020) Sozioökonomische Ungleichheit und COVID-19 – Eine Übersicht über den internationalen Forschungsstand. Journal of Health Monitoring, 5 (S7) DOI 10.25646/7058

- Datenbank scoping bis 15.6.2020
- 46 publications, 28 U.S., 16 UK, 1 Germany and Italy

- ¾ regional aggregate data

- U.S and UK: socio-economic inequalities correlate with probabilities for infections, severe illness and intensive care

- UK: Phillipina NHS nurses infections % 7 x than % among all nurses
Wachtler, B. et. al. (2020). Sozioökonomische Ungleichheit im Infektionsrisiko mit SARS-CoV-2 – Erste Ergebnisse einer Analyse der Meldedaten für Deutschland. Journal of Health Monitoring, 5 (S7): 19-31, DOI 10.25646/7056
Wachtler, B. et.al. (2020) . Sozioökonomische Ungleichheit im Infektionsrisiko mit SARS-CoV-2 – Erste Ergebnisse einer Analyse der Meldedaten für Deutschland
Journal of Health Monitoring, 5 (S7): 19-31, DOI 10.25646/7056

| Sozioökonomische Deprivation | Frauen Fälle pro 100.000 Einwohnerinnen | Männer Fälle pro 100.000 Einwohner |
|-----------------------------|----------------------------------------|-----------------------------------|
| Quintil 1 – gering           | 290                                    | 292                               |
| Quintil 2                   | 242                                    | 234                               |
| Quintil 3                   | 225                                    | 215                               |
| Quintil 4                   | 176                                    | 167                               |
| Quintil 5 – hoch            | 121                                    | 108                               |
Wachtler, B. et.al. (2020). Sozioökonomische Ungleichheit im Infektionsrisiko mit SARS-CoV-2 – Erste Ergebnisse einer Analyse der Meldedaten für Deutschland

Journal of Health Monitoring, 5 (S7): 19-31, DOI 10.25646/7056 /Altersstandardisierte COVID-19-Inzidenz in Deutschland nach sozioökonomischer Deprivation und Meldezeitraum
Wachtler, B. et.al. (2020) . Sozioökonomische Ungleichheit im Infektionsrisiko mit SARS-CoV-2 – Erste Ergebnisse einer Analyse der Meldedaten für Deutschland

Journal of Health Monitoring, 5 (S7): 19-31, DOI 10.25646/7056

Altersstandardisierte COVID-19-Inzidenz im Süden Deutschlands (Bayern und Baden-Württemberg) nach sozioökonomischer Deprivation und Meldezeitraum

Fälle pro 100.000 Einwohnerinnen

Fälle pro 100.000 Einwohner

Quintile: 1 (gering) 2 3 4 5° (hoch)
Haushalte mit und ohne Einkommenseinbußen durch Corona, nach Höhe des monatlichen Nettoeinkommens
Ein- und Mehrpersonenhaushalte, Anteile in Prozent

| Einkommensbereich       | Einbußen | keine Einbußen |
|-------------------------|----------|----------------|
| unter 900 Euro         | 49,3     | 50,7           |
| 900 bis 1500 Euro      | 41,3     | 58,7           |
| 1500 bis 2000 Euro     | 36,5     | 63,5           |
| 2000 bis 2600 Euro     | 31,4     | 68,6           |
| 2600 bis 4500 Euro     | 31,3     | 68,7           |
| über 4500 Euro         | 26,1     | 73,9           |

Quelle: Erwerbspersonenbefragung der Hans-Böckler-Stiftung, Welle 2; N = 5184; Gewichtung nach Welle 2
| Einkommenskategorie | spürbare Einbußen (bis 25 %) | große Einbußen (25-50 %) | sehr große Einbußen (50-99 %) | 100 % |
|---------------------|-----------------------------|--------------------------|-------------------------------|-------|
| über 4500 Euro      | 71,5                        | 21,5                     | 6,4                           |       |
| 2500 bis 4500 Euro  | 67,1                        | 26,6                     | 6,2                           |       |
| 2000 bis 2600 Euro  | 53,9                        | 39,9                     | 4,8                           |       |
| 1500 bis 2000 Euro  | 50,7                        | 40,6                     | 6,4                           |       |
| 900 bis 1500 Euro   | 47,8                        | 44,0                     | 7,1                           |       |
| unter 900 Euro      | 40,3                        | 40,3                     | 9,7                           | 9,7   |

Quelle: Erwerbspersonenbefragung der Hans-Böckler-Stiftung, Welle 2; N = 1614; Gewichtung nach Welle 2
Beschäftigte in Kurzarbeit, nach Höhe des individuellen Nettoeinkommens
Anteil in Prozent

| Einkommenskategorie | Anteil in Prozent |
|---------------------|------------------|
| unter 900 Euro     | 16,8             |
| 900 bis 1500 Euro  | 22,8             |
| 1500 bis 2000 Euro | 22,1             |
| 2000 bis 2600 Euro | 17,6             |
| 2600 bis 4500 Euro | 14,6             |
| über 4500 Euro     | 11,9             |

Quelle: Erwerbspersonenbefragung der Hans-Böckler-Stiftung, Wellen 1 und 2; N = 5371; Gewichtung nach Weile 2
Higher risk of COVID-19 hospitalization for unemployed: an analysis of 1,298,416 health insured individuals in Germany

Dragano, Christoph, J. Rupprecht, Olga Dortmann, Maria Scheider, Morten Wahrendorf

doi: https://doi.org/10.1101/2020.06.17.20133918. medRXiv June 19, 2020

Table 1: Sample description, main study characteristics including number and rate of cases of COVID-19 hospitalization (ICD-10-GM U07.1 + U07.2)

|                | observations and column-% OR mean age and standard deviation | cases with COVID-19 hospitalization | COVID-19 hospitalization, rate per 100,000 population# |
|----------------|---------------------------------------------------------------|------------------------------------|--------------------------------------------------------|
| **Total**      | 1,298,416                                                     | 1,311                              | 100.97                                                 |
| **Gender**     |                                                               |                                    |                                                        |
| Female         | 573,863 (44.20%)                                              | 516                                | 89.91                                                  |
| Male           | 724,553 (55.80%)                                              | 795                                | 109.72                                                 |
| **Age**        | 42.05 (SD 12.74)                                              |                                    |                                                        |
| **Employment situation** |                                                       |                                    |                                                        |
| Employed       | 936,828 (72.15%)                                              | 798                                | 85.18                                                  |
| Short-term unemployed | 16,702 (1.29%)                      | 19                                 | 113.76                                                 |
| Special benefit recipients | 36,763 (2.83%)            | 38                                 | 103.36                                                 |
| Long-term unemployed | 308,123 (23.73%)                   | 456                                | 147.99                                                 |

#unstandardized
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Table 2: Results from multivariate logistic regression models on association between employment situation and COVID-19 hospitalization among 1298.416 health insured individuals

|                      | Model 1   | Model 2   |
|----------------------|-----------|-----------|
|                      | crude model | adjusted for sex and age |
| **Odds Ratio**       |            |            |
| (95% confidence interval) | (95% confidence interval) |
| Employed (reference) | 1          | 1         |
| Short-term unemployed | 1.34 (0.85 - 2.11) | 1.18 (0.75 - 1.85) |
| Special benefit recipients | 1.21 (0.85 - 1.68) | 1.32 (0.95 - 1.83) |
| Long-term unemployed | 1.74 (1.55 - 1.95) | 1.84 (1.64 - 2.07) |
| Female (reference)   |            | 1         |
| Male                 | 1.24 (1.11 - 1.39) |            |
| Age                  | 0.99 (0.96 - 1.03) |            |
| Age²                 | 1.00 (1.00 - 1.00) |            |
Higher risk of COVID-19 hospitalization for unemployed: an analysis of 1,298,416 health insured individuals in Germany

Dragan, Christoph, J. Rupprecht, Olga Dortmann, Maria Scheider, Morten Wahrendorf

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| Male                | 1.24 (1.11 - 1.39)   | 1.00 (1.00 - 1.00)               |
| Age                 | 0.99 (0.96 - 1.03)   | 1.00 (1.00 - 1.00)               |
| Age^2               |                      | 1.00 (1.00 - 1.00)               |
A population-based cohort study of socio-demographic risk factors for COVID-19 deaths in Sweden

Sven Drefahl, Matthew Wallace, Eleonora Mussino, Siddartha Aradhya, Martin Kolk, Maria Brandén, Bo Malmberg & Gunnar Andersson

17 181 deaths. From March 13 to May 7, 2020

*Nature Communications* volume 11, Article number: 5097 (202)

Fig. 1 Hazard ratios of dying from COVID-19 and all other causes of death for men and women in Sweden. a Men aged 20 years and older, error bars representing 95% confidence intervals of hazard ratios, n = 3,876,881 men. b Women aged 20 years and older, error bars representing 95% confidence intervals of hazard ratios, n = 3,898,173 women. Blue squares indicating COVID-19 mortality. Orange circles indicating mortality from all other causes of death.
Men

- non-married higher risk of death by Covid-19, but never married, divorced lower than from all causes of deaths, widowed higher than all causes of death
- lower education higher, but secondary education higher than all causes of death
- migrants much higher (and reversed), especially from MENA countries
- low income lower than from all causes of death

Women

- all nonmarried much higher
- low income lower
- low education lower, but less than all causes
A population-based cohort study of socio-demographic risk factors for COVID-19 deaths in Sweden Sven Drefahl, Matthew Wallace, Eleonora Mussino, Siddartha Aradhya, Martin Kolk, Maria Brandén, Bo Malmberg & Gunnar Andersson

“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. “
summary on socio-economic inequalities

• $p(\text{contact})$: age, household size, life domain > SES, but interactions, but also counterintuitive effects (Ischgl!)

• $p(\text{infection/contact})$: age, migrants, vulnerability/prior chronic diseases, SES?

• $p(\text{morbidity/intensive care})$: long term unemployed

• $p(\text{mortality})$: age, nursing homes, weak SES

• $p(\text{household income})$: high

• $P(\text{wealth})$: ?? to low
schools, families and work
Wößmann, Ludger (2020): Folgekosten ausbleibenden Lernens: Was wir über die Coronabedingten Schulschießungen aus der Forschung lernen können. ifo-Schnelldienst, 6:38–44

analogies for past experience

• wage income differences by # of school years
• switch of school year from spring to Fall in the sixties
• summer gap U.S. (Alexander et al. 2007)
• teacher strikes

estimate

• if 1/3 of a school year is lost
  labor income across the whole working life reduced by 3 -4 %

but:

• of school years selectivity
• during Corona there was instruction
• summer gap differential exposure

therefore: data on unequal outcomes during Corona disruption
students on average reduced their daily learning time of 7.4 hours by about half, the reduction was significantly larger for low-achievers (4.1 hours) than for high-achievers (3.7 hours).

low-achievers disproportionately replaced learning time with detrimental activities such as TV or computer games rather than with activities more conducive to child development.

the learning gap was not compensated by parents or schools who provided less support for low-achieving students.

the reduction in learning time was not larger for children from lower-educated parents, but it was larger for boys than for girls.
Social inequality in the homeschooling efforts of German high school students during a school closing period.
Dietrich, H., A. Petzina & A.Lerche (2020)
European Societies,.doi:10.1080/14616696,2020.1826556

• last class of Gymnasium, n= 5866
• marked differences in average hours for home schooling:
  - father with a university degree 2.6 hours
  - father with voc training 2.5 hours
  - father without voc training 1.9 hours
• overall small % of explained variance : 0.12-0.17
• 15% had not done anything for schooling after 3 weeks
“Generation Corona?”
supply and demand for apprenticeships 2020
(Maier 2020)

• supply of apprenticeships. 500 – 460 thds (minus 25- 65 thds less than 2019)
• 90 -97 thds without a contract ( 16 to 23 thds more than 2019)
• qualification subsidies (3000€ per firm, low pick up ,only 57 % know of the program)

• Hauptschule graduates are hurt most
• but also: staying in school or going to university (2008 crisis)
Ifo-Schnelldienst, Nov 2020

Besetzung Ausbildungsplätze für das Schuljahr 2020/21
Als Anteil an allen ausbildenden Unternehmen.

Quelle: Randstad-Ifo-Personalleiterbefragung.
The impact of Covid-19 on gender inequality in the labor market and gender-role attitudes.
Reichelt, M., K. Makovi & A. Sargysyan (2020). European Societies, doi:10.1080/14616696.2020.1823010

controversy about reversal of gender roles during and in consequence of Corona

- surveys for Germany, U.S. and Singapore
- Women are more frequently becoming unemployed, reduce working hours and are in home office
- Among couples men express more egalitarian gender role attitude, if they become unemployed and their wives stay employed (while women who become unemployed become more traditional)
Changes in employment and relationship satisfaction in times of the COVID-19 pandemic: Evidence from the German Family Panel.
Schmid, L., J.Wörn, K.Hank, B.Sawatzki & S. Walper (2020)
European Societies,.doi:10.1080/14616696,2020.1836385

• 20% positive, 40% negative changes in partnership satisfaction
• men more negative changes than men
• also irrespective of changes in employment
• 40% home office
• children protect against negative changes
• more negative changes in home offices for partners without children (who, however, had higher initial levels for satisfaction)
open issues

• socio-demographic categories more important than socio-economic
• among socio-economic: exclusion rather than inequality

• “crisis” bias vs small or temporary effects
• “social justice” bias
• significance vs effect size
• many low quality pre-publications

• Emile Durkheim revisited: social anomia or altruism/collectivism?