



“Nothing is more important than education”

What opportunities does our society offer, which factors exacerbate inequality and how are people's attitudes and views affected by crises? Driven by a passion for numbers, social scientist Gundula Zoch analyses thousands of people's data to create a tangible picture of the complexities of our social reality.

By Deike Stolz

She wanted to do “something different”. But what? Twenty years ago, just graduating from school, she didn't have much of an idea. “Something different” meant: not electrical engineering like her father; not natural sciences like her mother; and not civil engineering like her older brother. But what? Gundula Zoch printed out long lists of degree courses. “My parents often used to say: ‘Education is the most important thing we can give you,’” she recalls. She found plenty of subjects worthy of consideration, but ultimately settled on sociology, “and I was overjoyed during my studies to find out just how fascinating it is.” Today, Gundula Zoch is a junior professor of Sociology of Social Inequalities at the University of Oldenburg, researching, among other things, precisely the central role of education in determining the trajectories of peoples' lives.

Her work revolves around the causes and consequences of social inequalities. Aside from the fact that we are all individually different: what opportunities does society offer us to participate in education (whether in childcare, school, vocational training, university or job-related training), maintain social contacts, earn a decent income, be politically active and live as healthily as possible? What factors promote inequalities – related to social background, gender, migration background, age or place of residence? And how do crises and transformations impact our career trajectories and political views, for example? These are the kind of questions that Zoch pursues, often in projects with researchers from other research institutions – such as the Leibniz Institute for Educational Trajectories (LifBi), with which she has maintained ties as a research fellow since moving on to Oldenburg in 2021.

For her research, Gundula Zoch draws on enormous data sets. “In Germany we have incredible resources in this area,” she explains. One example is the LifBi's National Educational Panel Study (NEPS), the largest longitudi-

nal study on educational inequalities. Since 2009 more than 70,000 people as well as 50,000 people in relevant context such as parents or teachers in schools, have been surveyed and assessed annually on their life situation, school, education, and employment as part of this survey. This allows for the examination of the trajectories of competencies and educational inequalities from birth to old age. The statistical methods Zoch uses to analyse these data sets allow her to detect correlations, identify mechanisms and determine cause and effect.

When commonly held notions and empirical reality diverge

It took some time before Zoch developed her enthusiasm for these quantitative methods – i.e. the standardised investigation into how and why particular combinations of characteristics are distributed statistically. “When starting out, it's pretty tricky to get your head around statistics and these methods”, Zoch says from personal experience during her times as an undergraduate. “Even today, I have the greatest sympathy for my students and make sure always to use plenty of examples to illustrate the particular importance of quantitative research methods”, she adds.

“I just found numbers to be a lot more convincing than verbal arguments: they help to make changes and their causes tangible.” She was so taken by them, in fact, that after earning her diploma in sociology, she completed an additional degree in economics, specialising in applied econometrics. This allowed her to deepen her knowledge of the causal analysis methods that at the time were more commonly used in economics and to be able to apply them to sociological questions.

These methods are still serving Gundula Zoch well today. In the WorkMum project, funded by the German Research Foundation, she and her team

are juggling complex data on more than 2,000 families. On a more or less annual basis, NEPS provides survey data on the parents' living and working situations; the children complete competence tests, for example in reading, maths and science; and researchers even observe the interactions between mothers and babies. Zoch and her team combine all this data with the social security data – accurate to the day – on the women's working hours, earnings and firm characteristics. “Collecting all of this ourselves would be a multi-million-euro project and just not feasible,” Zoch points out.

The most recent finding, published in June by the Federal Institute for Population Research, which is involved in the project, is that if mothers have their child comparatively early, before the average age for first births – currently 30 years – their children exhibit below-average maths and social skills in the first ten years of life, with the lowest skills manifesting in children of particularly young mothers of around 20 or under. These differences, according to Zoch and her team, are largely explained by the fact that younger mothers often have lower educational qualifications and incomes. These factors still have a strong influence on child development in Germany. The conclusion they draw from this data, however, is explicitly not that it is advantageous to start a family later, but rather that decent and reliable formal childcare provision would give particularly young mothers and their children a better chance to catch up.

The topic of formal childcare, and more specifically its expansion for under-threes in Germany, was already the subject of Zoch's multi-award-winning dissertation, for which she conducted research at the University of Bamberg with a scholarship from the Excellence Initiative. She cites it as an example of how common perceptions and empirical reality can diverge: “The perception at the time was that so much money had been invested in this area that all women should have been able to work. But the study showed that



Juggling complex data on more than 2,000 families: Oldenburg social scientists Gundula Zoch (right) and Susanne Schmid (left) at a meeting of the WorkMum project team at the Federal Institute for Population Research.

there were still not enough childcare places, especially in West Germany". Furthermore, the intended impact of boosting employment among mothers was in practice mainly concentrated on families with higher incomes and qualifications, "who obviously know more about how to get their child into a childcare institution in the first place".

In other areas, her research has confirmed common perceptions, such as the fact that mothers tend to back-pedal professionally after the birth of a child. For example, Zoch used NEPS data to show that mothers reduce their participation in job related trainings four times more (by 16 percentage points) than fathers (4 percentage points) after parental leave, and over longer periods of time.

Zoch believes it is important to regularly review prevalent views on society using empirical data. "There are those who might say: 'That's obvious, why do we need a study about it?' But even if the result aligns with general perceptions, it makes a difference if we can quantify trends, highlight social inequalities, and gain a precise understanding of cause and effect." She is regularly asked to give lectures by members of parliament or interest groups, and her findings are incorporated into expert reports for state parliaments or the Bundestag. Although her task is to detect social inequalities

in statistics and averages rather than to assess these, the sociologist notes that her research undoubtedly "puts a finger on the wound" in the public debate.

Every now and then, individual researchers like Zoch are able to use their ideas to help shape and develop data collection in Germany. "Researchers can apply to contribute their own ideas to all large datasets such as the National Educational Panel Study," she says. An application she submitted with a colleague from the University of Leipzig met with success in 2021: In order to analyse the causes of increasing social polarisation and fragmentation in more detail, the NEPS survey now also asks respondents to what extent they agree with conspiracy myths.

Under scrutiny: the consequences of the Covid-19 pandemic

The initial results are surprising, but not in a positive way. Of the nearly 4,000 people surveyed in 2022, 20 per cent or more displayed a conspiracy mentality. In other words, they generally tended to attribute social or political phenomena to the alleged machinations of small, secret, powerful and malevolent groups, supposedly controlling the world's destiny.

According to Zoch, the data shows that such views are not limited to people with a low level of education or in precarious employment. "They also extend across higher education levels, genders, different occupational groups and social backgrounds – in other words, across broad sections of the population."

In other projects, she is analysing the consequences of the Covid-19 pandemic. As part of a project funded by the Federal Ministry of Education and Research, she is looking at shifts in political attitudes, such as the initial upsurge of trust in government and public institutions that later began to erode. A project on other long-term effects of Covid has led to a collaboration with healthcare researcher Prof. Dr Antje Wulff and psychologist Prof. Dr Mandy Roheger from the University of Oldenburg's Medical School: until the end of 2025, the team will be investigating how unequal working and living conditions affect post-Covid syndrome and which factors favour recovery in those suffering from long Covid.

One thing is certain: Gundula Zoch won't run out of research topics anytime soon. "I only have to step out of my office to find endless sources of inspiration. Society is always changing, and there are always new influences that reproduce social inequalities or give rise to new ones."

How is social media changing political communication?

Outlooks



**Prof. Dr
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Social media has ushered in a 'new era' of political communication. For a long time, direct personal communication between politicians and the electorate, for example at rallies, was the norm. Then came mass media like newspapers and television. Today, social media is becoming ever more important. It allows political actors to convey a different, customised narrative to each voter group using targeted language and advertising. Of course, rallies and traditional mass media still exist, but through social media political communication is becoming increasingly individualised.

In general, it is difficult to demonstrate either empirically or experimentally how political communication affects voter behaviour. What we do know is that people have always chosen which media to consume according to their political views, and that they like to surround themselves with like-minded people. So they have always lived in an opinion or filter bubble, even before social media existed. There is, however, considerable evidence that social media contributes to a hardening of stances in political debates, because people come together on these platforms who would otherwise not have met and who hold very different views. Unfortunately, it seems likely that this polarisation will only tighten its grip on political culture and society as a whole in the future, with debates becoming more gridlocked, people being less willing to compromise and ultimately the formation of governments becoming increasingly difficult, too.