

The Stereotype of Schizophrenia and Its Impact on Discrimination Against People With Schizophrenia: Results From a Representative Survey in Germany

by Matthias C. Angermeyer and Herbert Matschinger

Abstract

This study aims at assessing the prevalence of different components of the stereotype of schizophrenia among the general public and examining their impact on the preference for social distance and the acceptance of structural discrimination—that is, imbalances and injustices inherent in legal regulations and the provision of health care. In spring 2001, a representative survey was carried out in Germany involving individuals of German nationality aged 18 years and older and living in noninstitutional settings ($n = 5,025$). A personal, fully structured interview was conducted, including a list of items covering the various aspects of the stereotype, a social distance scale, and items assessing respondents' agreement with structural discrimination. Among the five stereotype components, the perception of people with schizophrenia as being unpredictable and incompetent was most frequently endorsed by the public, followed by perceived dangerousness. While the desire for social distance was best predicted by these two stereotype components, holding the individual responsible for the illness was the most powerful predictor of the acceptance of structural discrimination.

Keywords: Stereotype, discrimination, schizophrenia, population survey.

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In recent years, programs aimed at reducing the stigma of mental illness in general or of schizophrenia in particular have been initiated in many countries around the globe. Apart from the World Psychiatric Association (WPA) Global Program against Stigma and Discrimination because of Schizophrenia “Open the Doors,” which is currently operating in over 25 countries (Lopez-Ibor 2002; Sartorius 2002), there are a number of national programs such as the National Alliance for the Mentally Ill (NAMI) 1996 campaign in the United States, the Royal College of Psychiatrists' campaign “Changing Minds:

Every Family in the Land” (Crisp 2004) in the United Kingdom, and the Australian National Community Awareness Program (Rosen et al. 2000). These programs have been employing numerous strategies to reduce stigma (Angermeyer and Schulze 2001). Unfortunately, quite often, the choice of strategy had to be made primarily on the basis of intuition rather than empirical evidence (Angermeyer 2002). Only recently have conceptualizations of the various components of stigma been proposed, which might prove helpful for planning antistigma activities (Link and Phelan 2001; Sartorius 2001; Corrigan and Watson 2002).

Link and Phelan's stigma concept (2001) will serve as the theoretical framework for this study. According to the authors, stigma exists when the following interrelated components converge: (1) people distinguish and label human differences; (2) dominant cultural beliefs link labeled persons to undesirable characteristics that form the stereotype; (3) labeled persons are seen as an outgroup, as “them” and not “us”; and (4) labeled persons experience status loss and discrimination that lead to unequal outcomes (Link and Phelan 2001, p. 367). According to Link and Phelan, two forms of discrimination are to be distinguished: individual discrimination and structural discrimination. Individual discrimination refers to obvious forms of overt discrimination directed toward a person, such as rejecting a job application or refusing to rent an apartment. In research, this form of discrimination is most frequently measured by the desire for social distance (Bogardus 1925). Structural discrimination, by contrast, denotes imbalances and injustices inherent in social structures that work to the disadvantage of a stigmatized group even in the absence of individual discrimination. It can take place in regard to legal provision as well as the interpretation and administration of laws (Gutiérrez-

Send reprint requests to Dr. M.C. Angermeyer, University of Leipzig, Department of Psychiatry, Johannisallee 20, 04317 Leipzig, Germany; e-mail: krausem@medizin.uni-leipzig.de.

Lobos 2002). Another area where structural discrimination can occur is the allocation of financial resources—for instance, expenditures for medical care and research disbursements (Beck et al., in press). As suggested by the notion of the “stigma process” (Link et al. 1997), the four stigma components can be conceived of as being arranged in a logical order, starting with the identification and labeling of differentness, and ending with the loss of status and discrimination.

Hayward and Bright’s (1997) review of the stigma literature will serve as a further conceptual source for our study. According to the authors, four main conceptions about mentally ill people compose the stereotype of mental illness: (1) they are dangerous; (2) they are partly responsible for their condition; (3) they have an illness that is chronic and difficult to treat, with a poor prognosis; and (4) they are unpredictable and unable to follow accepted social roles. Apart from these negative stereotypes, there also exists a positive stereotype about the mentally ill. Among the general public, the belief prevails that there is a close association between “genius” and “madness” (echoing the title of Lombroso’s classic book published in 1864). As more recent studies have convincingly shown, among artists, there might be an overrepresentation of people with affective disorders but not of people with schizophrenia (Jamison 1993; Bolwig 2002).

Using data from a representative survey among the general population, we set out to investigate the relationship between the two components of Link and Phelan’s conceptualization of the stigma process: the stereotype that is elicited by the label schizophrenia, and the ensuing discrimination against people suffering from this disorder. We will examine how the various components of the stereotype are associated with the tendency to discriminate against people with schizophrenia, both individually and structurally.

As concerns individual discrimination, previous studies indicate that there is a relationship between stereotypes about people with mental illness and a preference for greater social distance. For example, there is strong evidence for a close association between the perception of mentally ill people as being dangerous and the desire for social distance (Link and Cullen 1983; Grausgruber et al. 1989; Angermeyer and Matschinger 1997; Link et al. 1999; Martin et al. 2000; Corrigan et al. 2001). Those who tend to believe that the patients themselves are responsible for their illness—that is, consider it to be a result of bad character—are reported to be more likely to shun people suffering from a mental disorder (Martin et al. 2000). There are several studies demonstrating a positive correlation between the expectation of poor outcome and the desire for greater social distance (Norman and

Malla 1983; Socall and Holtgraves 1992; Kirmayer et al. 1997). Finally, the more people with mental illness are perceived as unpredictable, the more rejection they appear to face (Socall and Holtgraves 1992). Although these findings support the notion of an association between the various stereotype components and social distance, they do not inform us about the strength of these relationships. We do not know which components exert a strong effect and which ones are less relevant.

With regard to structural discrimination, our knowledge is even more limited. This form of discrimination has been widely neglected by research (Angermeyer 2002). We do not know of a single study examining how stereotyping and the imbalances and injustices inherent in social structures are related to each other, let alone what the relative importance of various stereotypes is. Because in democratic societies, legal regulations and political decisions are strongly influenced by public opinion, it is of interest to know to what extent discriminating practices and policies are accepted by the public. The more accepted they are, the more willing policy makers will be to make decisions that enact structural discrimination.

In stigma research, two different stimuli are most often used for eliciting beliefs and attitudes regarding mental illness. First, the respondents are presented with a vignette depicting a case of a particular mental disorder (e.g., schizophrenia), with the diagnosis remaining unmentioned. This method is best suited for exploring how people interpret and react to pathological behavior. Second, statements explicitly referring to (current or former) mental illness in general, or to specific diagnoses (e.g., schizophrenia), are used. This format allows people’s own thoughts and feelings associated with these labels to be captured (which does not imply that their notion of mental illness or a particular disorder is necessarily correct). Because we were primarily interested in exploring the full range of ignorance and misconceptions that result in discriminatory reactions, we decided to use the second approach, refraining from providing an explanation of what schizophrenia is like.

In our article we will address the following questions:

1. How prevalent are the different components of the stereotype of schizophrenia among the German population?
2. How strong is the association between the different stereotype components and the two forms of discrimination, individual discrimination and structural discrimination? As the indicator of individual discrimination we will use the public’s preference for social distance, and as the indicator of structural discrimination we will use its acceptance by the public.

Methods

Sample. During May and June 2001, a representative survey was conducted in Germany among persons of German nationality who were aged 18 years and older and lived in noninstitutional settings. The sample was drawn using a random sampling procedure with three stages: (1) electoral wards, (2) households, and (3) individuals within the target households. Target households within the sample points were determined according to the random route procedure; target persons were selected according to random digits. Informed consent was considered to have been given when individuals agreed to complete the interview. In total, 5,025 interviews were conducted, reflecting a response rate of 65.1 percent. The sociodemographic characteristics of the respondents are reported in table 1. The sample is comparable to the whole German population aged 18 years and older in 2000 (Statistisches Jahrbuch 2002/Official Registry Report 2002). The personal interview was fully structured, including measures of preference for social distance, acceptance of structural discrimination, and stereotypes of schizophrenia. The survey was carried out by USUMA Markt-, Meinungs- und Sozialforschung (Berlin), a survey firm that specializes in social research. Before the fieldwork was started, the interviewers received intensive training from our research group.

Measures

Dependent variables. *Preferences for social distance* served as a proxy for behavioral intentions to distance oneself from people with schizophrenia. They were measured by responses to the seven items of the Social Distance Scale developed by Link et al. (1987). Specifically, respondents were asked whether they would accept someone with schizophrenia in the following social relationships: landlord, coworker, neighbor, member of the same social circle, personal job broker, in-law, and childcare provider. Using a five-point Likert scale, ranging from "in any case" (1) to "in no case at all" (5), the respondents could indicate to what extent they would be willing to accept someone with schizophrenia in a given social relationship. The first factor derived from factor analysis had an eigenvalue of 3.99, and all other factors had eigenvalues below 0.40, indicating the unidimensionality of the scale. The object score of the first factor was used as an indicator for social distance. High scores indicated a preference for great social distance. The reliability coefficient (Cronbach's alpha) was 0.90.

Based on the results of focus groups with schizophrenia patients, their relatives, and mental health professionals (Schulze and Angermeyer 2002), a scale for the assessment of the public's *acceptance of structural discrimination* has been developed focusing on discrimination in the area of health care provision, health and nurs-

Table 1. Sociodemographic characteristics of the sample

	Group	<i>n</i>	Percentage
Gender	Male	2,199	43.76%
	Female	2,826	56.24%
Age	18–25	525	10.53%
	26–35	869	17.43%
	36–45	1,048	21.01%
	46–55	779	15.62%
	56–65	862	17.28%
	>65	904	18.13%
Marital status	Married	2,766	55.22%
	Widowed	551	11.00%
	Divorced	448	8.94%
	Single	1,244	24.84%
Educational attainment	No school completed	125	2.50%
	Low	2,390	47.72%
	Middle	1,619	32.33%
	High	874	17.45%
Place of residence	West	4,005	79.70%
	East	1,020	20.30%

ing insurance coverage, rehabilitation opportunities, and access to work. It comprises the following six items:

1. "People with schizophrenia should be entitled to receive the same medical services as people with other conditions." (reversed coding)
2. "People with schizophrenia should be excluded from health insurance to keep insurance contributions low."
3. "Taxes should not be spent on people with schizophrenia."
4. "If jobs are scarce, people with schizophrenia should not be given any jobs."
5. "Nursing care insurance should also provide benefits for people with schizophrenia." (reversed coding)
6. "People with schizophrenia should be prescribed cheap medication, even if these have more side effects."

Using a five-point Likert scale ranging from "very much agree" (1) to "don't agree at all" (5), respondents were asked to indicate their opinions of regulations disadvantaging people with schizophrenia. Assuming that many of the respondents might be rather unfamiliar with this topic, we included a "don't know" category. This was intended to prevent the respondents from randomly choosing one of the five response categories or simply producing missing values. Previous analyses of "don't know" responses had shown that, rather than indicating that respondents simply do not have an opinion or are undecided (corresponding to the midpoint of the five-point scale), the responses may depend on the latent dimension for which the items serve as indicators (Matschinger 1996; Matschinger and Angermeyer 1996). Additional analysis showed that the probability of "don't know" responses was inversely related to educational attainment. Therefore, list-wise deletion of respondents with respect to "don't know" responses would result in a considerable bias of the sample, with an overrepresentation of respondents with higher education. There was no association of "don't know" responses with other sociodemographic variables. To evaluate the meaning of "don't know" responses relative to the other ordinal response categories, a homogeneity analysis was carried out, which is the nonlinear equivalent to the linear principal component analysis (Greenacre 1984, 1993; Gifi 1990). The homogeneity analysis treats the variables as nominal, generating new scores for the item categories that are optimal in the sense that the internal consistency is maximized. This procedure allows for interpretation of the relative ordering of the categories post hoc. To avoid degenerated

results, including respondents with too many "don't know" answers, a stepwise procedure was used. For each step, allowing for only a specified, subsequently reduced number of "don't know" responses for each respondent, the homogeneity analysis was carried out until a sound, nondegenerated solution was obtained. This procedure reduces the sample size until the maximum number of acceptable "don't know" responses is identified. A solution was accepted if the first axis of the canonical analysis (Bekker and De Leeuw 1988) was not dominated by "don't know" responses. This was already the case after removal of those who had responded to all items with "don't know." This resulted in a slight reduction of the sample size from 5,025 to 4,839, instead of 4,028 if list-wise deletion had been applied. The object scores for the first axis of the homogeneity analysis measure the latent dimension "acceptance of structural discrimination." These scores are equivalent to component scores of a nonlinear principal component analysis. Tabulating the means of the object scores for each response category of each item provided the necessary information for both the object scores and the "don't know" answers and provided information about the relative location of the response categories on the latent dimension. "Don't know" answers turned out to be similar to the acceptance of structural discrimination. The reliability coefficient (Cronbach's alpha) for the first axis was 0.84.

Independent variables. For the assessment of the *stereotype of schizophrenia*, 33 five-point Likert-type items were generated, drawing on results of the above-mentioned focus groups and adapting items from existing instruments (e.g., Cohen and Struening 1962). The item list was intended to cover the four components of the negative stereotype of mental illness identified by Hayward and Bright as well as the positive stereotype of creativity. Using a five-point Likert scale ranging from "totally agree" (1) to "totally disagree" (5), respondents were asked to indicate to what extent they agreed or disagreed with the statements. Following the same rationale as with the acceptance of structural discrimination, a "don't know" category was also provided. In a first step, a maximum likelihood factor analysis was carried out with all 33 items. Based on the assumption that the stereotype components are to some extent intercorrelated rather than independent, a promax rotation with delta 5 was employed, which yielded optimally unique factor loadings. The item composition of the five factors, including the factor loadings of the individual items, is shown in table 2. The factors were labeled as follows: dangerousness (eigenvalue 8.1; explained variance 58%), attribution of responsibility (eigenvalue 2.7; explained variance 16%), creativity (eigenvalue 1.9; explained variance 7%), unpredictability/incompetence (eigenvalue 1.9; explained

Table 2. Five dimensions of stereotype about schizophrenia derived from promax rotated maximum likelihood factor analysis¹

	Factor loading	Agree (%)	Undecided (%)	Disagree (%)	Don't know (%)
Factor 1 "Dangerousness"					
Most sex crimes are committed by people with schizophrenia.	0.81	19.0	13.9	37.7	28.9
People with schizophrenia commit particularly brutal crimes.	0.79	19.1	15.6	36.4	28.6
In recent years, the number of violent crimes committed by people with schizophrenia has been increasing more and more.	0.73	21.4	16.5	24.5	37.2
If all patients with schizophrenia were admitted to locked wards, the number of violent crimes could be markedly reduced.	0.67	19.0	16.7	41.5	22.4
People with schizophrenia are a great threat to small children.	0.61	36.2	22.0	22.7	18.7
The only thing you can do with patients with schizophrenia is put them in hospital for a long time.	0.46	24.3	19.8	38.5	17.0
Only a few dangerous criminals have schizophrenia.	-0.45	26.2	20.7	20.1	32.6
Factor 2 "Attribution of responsibility"					
Anyone who gets schizophrenia is a failure.	0.70	6.1	9.5	69.7	14.2
Schizophrenia is the penalty for bad deeds.	0.69	5.3	8.4	73.9	12.0
Whether you get schizophrenia is a question of willpower and self-discipline.	0.61	10.1	11.0	63.0	15.8
Schizophrenia takes its tragic course. There is thus no point in treating it.	0.51	9.8	15.2	55.1	19.5
Successful people rarely get schizophrenia.	0.51	11.8	18.2	40.2	29.4
You can get schizophrenia if you lead an immoral life.	0.45	19.6	15.0	47.6	17.5
Factor 3 "Creativity"					
People with schizophrenia are generally highly intelligent.	0.68	24.3	28.7	18.0	28.6
People who have schizophrenia are often more creative than other people.	0.63	26.4	23.4	20.4	29.6
Genius and madness go hand in hand.	0.56	35.5	24.6	20.4	19.1
Artists have a high risk of getting schizophrenia.	0.51	18.5	21.2	33.2	26.7
Factor 4 "Unpredictability/incompetence"					
People with schizophrenia are completely unpredictable.	0.64	39.9	26.8	19.4	13.7
People with schizophrenia are not capable of making important decisions about their lives.	0.60	36.9	25.4	19.7	17.5
People with schizophrenia definitely need a guardian.	0.60	36.0	23.2	20.8	19.6
You never know what a patient with schizophrenia is going to do next.	0.59	46.7	25.2	13.0	14.6
People with schizophrenia are quick to lose their self-control.	0.55	50.1	24.4	9.9	15.1
People with schizophrenia can't think logically.	0.45	21.4	20.2	36.1	22.1
Factor 5 "Poor prognosis"					
With modern treatment methods these days, many patients with schizophrenia can be cured.	0.66	33.5	28.1	14.8	23.3

Table 2. Five dimensions of stereotype about schizophrenia derived from promax rotated maximum likelihood factor analysis¹—Continued

	Factor loading	Agree (%)	Undecided (%)	Disagree (%)	Don't know (%)
Nowadays treatment for schizophrenia is just as good as it is for diabetes.	0.45	18.6	21.2	32.4	27.6
Rehabilitation schemes designed to get patients back to work are usually doomed to failure.	-0.44	16.7	21.7	37.5	23.6
There is still no effective treatment for schizophrenia.	-0.43	21.4	20.2	24.4	33.6

¹ Responses were recorded on a 5-point scale, the extremes of which bore the statements "totally agree" and "totally disagree." The 2 points on either side of the midpoint of the scale are combined to the categories "agree" and "disagree," respectively. "Undecided" denotes the middle category. There was also a "don't know" category.

variance 7%), and poor prognosis (eigenvalue 1.4; explained variance 6.5%). Table 3 shows that quite a few respondents had chosen this response category. Because factor analysis could be applied only after deleting all "don't know" answers, the sample size dropped from 5,025 to 1,520, which unavoidably resulted in a bias.

Therefore, a homogeneity analysis was again carried out separately for each dimension, using the same procedure as described above. For each stereotype component, items that had exhibited factor loadings over 0.40 in the maximum likelihood factor analysis were selected. The first line in table 3 shows that, except for "dangerousness" and "creativity," only those respondents who had always responded with "don't know" had to be excluded from the analysis. With the exception of the dimension "creativity," the sample size dropped only moderately. Except for "poor prognosis" (Cronbach's alpha 0.62), the internal consistency of the dimensions was satisfactory (Cronbach's alpha between 0.70 and 0.87) (table 3). For each item, the meaning of the "don't know" response was assessed with respect to the dimension measured. When the means of the object scores for each response category of each item are tabulated, it can be shown that throughout all stereotype components, answering "don't know" was similar to disagreement with the stereotype; except for poor prognosis, where "don't know" answers were similar to endorsing a poor prognosis. Table 4 reports the intercorrelations among the five stereotype dimensions using the first axis of the homogeneity analysis as described above. As can be seen, the highest correlation exists between the dimensions dangerousness and unpredictability/incompetence.

To assess *familiarity with mental illness*, we asked the respondents whether they or anyone within their family had ever undergone psychiatric treatment. We further inquired whether they or any member of their family was in contact with psychiatric patients, either professionally or as a volunteer. Finally, we asked whether they knew of

anyone within their circle of friends, among their coworkers, or in their neighborhood who was either undergoing psychiatric treatment or dealing with the mentally ill on a professional or voluntary basis. Based on this information, we established four hierarchical categories representing the intensity of personal experience with mental illness: (1) the respondent him- or herself has been in psychiatric treatment; (2) a family member of the respondent has undergone psychiatric treatment; (3) the respondent has a friend, coworker, or neighbor who has been undergoing psychiatric treatment, or he or she him- or herself or another family member or friend has been active as a professional or volunteer in the field of psychiatry; and (4) the respondent has no personal experience with mental illness. If several categories applied, the one representing the highest level of familiarity was chosen.

Results

Prevalence of the Stereotype of Schizophrenia. In table 2, the responses to the statements representing the various components of the stereotype of schizophrenia are reported. Two statements referring to the great danger people with schizophrenia allegedly pose for the public ("Most sex crimes are committed by people with schizophrenia," "If all patients with schizophrenia were admitted to locked wards, the number of violent crimes could be markedly reduced") were met with approval by one-fifth of the respondents, just half as many as those who disagreed with this view, which is unsupported by empirical evidence. As recent epidemiological studies have shown, while there is a somewhat increased relative risk for committing violent crimes (Angermeyer 2000), the proportion of violent crimes accounted for by people with schizophrenia ("attributable risk") is rather small (Stuart and Arboleda-Flórez 2001; Walsh et al. 2002). In addition, the responses to the statements about sex crimes illustrate

Table 3. Results of the homogeneity analysis for the five dimensions of the stereotype of schizophrenia

	Dangerousness	Attribution of responsibility	Creativity	Unpredictability/incompetence	Poor prognosis
Maximum no. of allowed "don't know" responses	5/7	5/6	2/4	5/6	3/4
Sample size	4,412	4,711	4,056	4,670	4,457
Variance explained	56%	46%	50%	54%	47%
Internal consistency	0.87	0.77	0.70	0.82	0.62

Table 4. Intercorrelations among the five dimensions of the stereotype of schizophrenia

	Dangerousness	Attribution of responsibility	Creativity	Unpredictability/incompetence
Dangerousness	1.000			
Attribution of responsibility	0.490			
Creativity	-0.064	-0.092		
Unpredictability/incompetence	0.595	0.244	-0.119	
Poor prognosis	0.253	0.028	-0.075	0.286

the public's confusion about schizophrenia and personality disorders. As Leff (2001) has pointed out, this is engendered by the false equivalence of schizophrenia with split personality. In fact, 67 percent of our respondents shared the belief that a split personality is the cause of schizophrenia. One-fifth of the respondents agreed, and nearly two-fifths disagreed with the notion that people with schizophrenia commit particularly brutal crimes, which is equally unsupported by empirical data (Eronen et al. 1999). The same applies to the claim, which again was approved by one-fifth of those questioned, that, in recent years, the number of violent crimes committed by people with schizophrenia has been increasing more and more (Taylor and Gunn 1999). Most frequently (by over one-third of the respondents), the opinion was endorsed that people with schizophrenia are a great danger for little children, which again may result from the confusion with sexual offenders with personality disorders.

The majority of the respondents rejected the notion that the illness may be the patients' own fault. Only a few held the patients responsible for their illness. This finding applies especially to the idea that schizophrenia represents the punishment for evil deeds or that someone who gets the illness is a loser. Both were endorsed by only 5% and 6% of the respondents, respectively. While it was also

more frequently rejected than accepted, there was a slightly greater readiness to adopt the view that an immoral lifestyle may be to blame.

The unpredictability/incompetence dimension encompasses two different aspects: (1) that people with schizophrenia are completely unpredictable, that one never knows what they will do next, and that they lose self-control very quickly (a view shared by 40% to 50% of the respondents); and (2) that people with schizophrenia are incompetent—that is, that they are not capable of making decisions about their lives and definitely need a guardian (which was endorsed by the respondents almost twice as often as it was rejected).

The public's beliefs about the prognosis of schizophrenia appear rather optimistic. The respondents agreed over twice as frequently than they disagreed with the statement that, nowadays, many patients can be cured with modern treatment methods. Only one out of five respondents shared the opinion that there is still no effective treatment for schizophrenia, and one out of five considered rehabilitation efforts to be doomed to failure.

The opinion that people with schizophrenia are more creative and intelligent than other people was met with more approval than disapproval. The notion of a close association between genius and madness was endorsed by more than one-fifth of the lay public.

Association Between Stereotype and Discrimination.

After having reported data on the prevalence of stereotypical views about schizophrenia among the German public, we will address the question of how these views affect the readiness to discriminate against people with schizophrenia, distinguishing between preference for social distance and acceptance of structural discrimination. Allowing for correlated residuals, we performed a multivariate regression analysis with the two forms of discrimination as dependent variables and the sociodemographic characteristics of the respondents, their familiarity with mental illness, and the five stereotype components as independent variables. Table 5 shows the results of the regression of respondents' desire for social distance on the predictor variables. Model 1 displays the results of the baseline model that expresses social distance as a function of the four sociodemographic characteristics gender, age, education, and place of residence. Model 2 adds to the equation a variable indicating the degree of familiarity with mental illness. Finally, model 3 assesses the effect of the five stereotype components.

In the baseline model, the coefficients indicate that sociodemographic characteristics have only a minimal impact. Only age and educational attainment are found to have a significant influence on stated preferences for social distance: the older and the less educated the respondents are, the stronger is their tendency to avoid contact with people suffering from schizophrenia. The sociodemographic variables account for only 2.3 percent of the variance in expressed desire for social distance.

In model 2, we ask net of sociodemographic characteristics, does familiarity with mental illness affect preferences for social distance? As expected from previous studies (see overview in Angermeyer et al. 2004), respondents who are familiar with mental illness tend to be less willing to be in contact with people with schizophrenia. When this variable was included, the amount of explained variance increased slightly, to 5.4 percent.

Finally, in model 3, we add the five stereotype components to the model tested. They prove to have a powerful impact on the preference for social distance from people with schizophrenia, accounting for a substantial share of explained variance, amounting to 23.3 percent net of sociodemographic characteristics of the respondents and their familiarity with mental illness. Perceiving people with schizophrenia as unpredictable and incompetent has the strongest effect, followed by perceptions of dangerousness and the anticipation of poor prognosis. By contrast, ascribing above-average creativity and intelligence reduces the desire to shun people. Attribution of responsibility to those afflicted by the disorder has the smallest effect, by far. In addition, the five stereotype components have a mediating effect, attenuating the influence of edu-

cation on desired social distance to nonsignificance.

As concerns the acceptance of structural discrimination, a slightly higher percentage of variance (4.9%) is explained by sociodemographic characteristics. They all, except for age, have a significant influence on the respondents' desire for social distance: female respondents, those with higher educational attainment, and those originating from the eastern part of the country show a lower tendency toward shying away from people with schizophrenia. When familiarity with mental illness is added (model 2), which reduces the acceptance of structural discrimination, the amount of explained variance increases slightly to 6.1 percent. With 27.5 percent net of sociodemographic characteristics and familiarity with mental illness, our third model explains even more variance than that for desired social distance. Unlike with social distance, blaming people for their illness is the stereotype component that most increases the acceptance of regulations that disadvantage people with schizophrenia. As with social distance, perceptions of dangerousness rank second, followed by the attribution of exceptional creativity and intelligence, which again operates in the opposite direction, and the anticipation of poor prognosis. The effect of the belief that people with schizophrenia are unpredictable and incompetent is practically negligible in this respect. Here again, the five stereotype components have a mediating effect, substantially reducing the impact of education. In addition, the effect of familiarity with mental illness on the acceptance of structural discrimination is reduced to almost nonsignificance.

Because, as reported in table 4, dangerousness was strongly correlated with two other stereotype components (unpredictability/incompetence, attribution of responsibility), we repeated the analysis entering each stereotype component separately after the sociodemographic characteristics and the familiarity variable. The hierarchy of importance was the same as if all variables were entered simultaneously. Again, dangerousness came out as the second most important stereotype component for both the preference for social distance and the acceptance of structural discrimination. In addition, we compared people scoring at the 10th percentile with those scoring at the 90th percentile on the five stereotype components. Again, the hierarchy of importance for the two forms of discrimination remained unchanged, with unpredictability/incompetence having the strongest effect on the desire for social distance (exceeding one standard deviation) and the attribution of responsibility having the strongest effect on the acceptance of structural discrimination (reaching one standard deviation). Again, dangerousness had the second strongest effect on both measures of discrimination.

At the beginning of the interview, a subsample ($n = 2,481$) had been presented with a diagnostically unlabeled

Table 5. Regression of social distance and acceptance of structural discrimination on the five stereotype components (unstandardized regression coefficients)

	Model 1		Model 2		Model 3	
	B	95% CI	B	95% CI	B	95% CI
Social distance						
Age	0.006***	0.004 to 0.007	0.006***	0.004 to 0.007	0.004***	0.002 to 0.006
Gender (1 = female)	-0.039 ns	-0.095 to 0.016	-0.012 ns	-0.067 to 0.043	0.012 ns	-0.044 to 0.067
Education	-0.114***	-0.150 to 0.078	-0.065***	-0.100 to -0.029	-0.001 ns	-0.039 to 0.036
Place of residence (1 = East)	-0.011 ns	-0.080 to 0.058	-0.022 ns	-0.090 to 0.046	0.026 ns	-0.044 to 0.096
Familiarity			-0.375***	-0.434 to -0.316	-0.237***	-0.297 to -0.178
Dangerousness					0.184***	0.145 to 0.222
Attribution of responsibility					0.077***	0.046 to 0.108
Creativity					-0.168***	-0.195 to -0.140
Unpredictability/Incompetence					0.266***	0.231 to 0.302
Poor prognosis					0.158***	0.128 to 0.189
R ²	0.023		0.054		0.268	
F	28.10		54.31		134.39	
Acceptance of structural discrimination						
Age	-0.000 ns	-0.002 to 0.002	-0.000 ns	-0.002 to 0.001	-0.001 ns	-0.002 to 0.001
Gender (1 = female)	-0.163***	-0.219 to -0.107	-0.146***	-0.201 to -0.090	-0.092***	-0.147 to -0.036
Education	-0.245***	-0.281 to -0.209	-0.213***	-0.250 to -0.177	-0.083***	-0.121 to -0.046
Place of residence (1 = East)	-0.155***	-0.224 to -0.085	-0.162***	-0.231 to -0.093	-0.185***	-0.255 to -0.116
Familiarity			-0.237***	-0.297 to -0.177	-0.065*	-0.124 to -0.007
Dangerousness					0.233***	0.194 to 0.271
Attribution of responsibility					0.390***	0.360 to 0.421
Creativity					-0.119***	-0.146 to -0.091
Unpredictability/Incompetence					0.055**	0.020 to 0.090
Poor prognosis					0.091***	0.062 to 0.121
R ²	0.049		0.061		0.335	
F	60.93		61.41		184.72	
n	4,749		4,749		3,676	

Note.—CI = confidence interval; ns = nonsignificant.

* p < 0.05; ** p < 0.01; *** p < 0.001

vignette depicting someone displaying symptoms of schizophrenia, fulfilling the criteria of *DSM-III-R* (APA 1987). This was followed by an open-ended question, asking the respondents how they would label the problem described in the vignette. Exactly 22.4 percent identified the type of mental disorder correctly. We repeated the multivariate regression with this subsample, including a variable indicating whether the respondents had recognized the schizophrenia disorder. While this had no significant effect on the preference for social distance, there was a significant effect on the acceptance of structural discrimination: those who had recognized that the individual in the vignette was suffering from schizophrenia showed a lower tendency toward accepting structural discrimination. When the stereotype components were entered into the regression equation, this association was reduced to nonsignificance. This suggests that the stereotype has a mediating effect. However, when interaction terms were added, there was a significant interaction effect between only the recognition of schizophrenia and the attribution of responsibility: among those who had recognized schizophrenia, the effect of attribution of responsibility on the acceptance of structural discrimination was stronger. As concerns the other four stereotype components, it did not matter whether the respondents had recognized the disorder correctly.

Discussion

The main results of our study can be summarized as follows. Among the five components of the public stereotype of schizophrenia, the most prevalent is that people with this disorder are unpredictable and incompetent. Next comes the perception of dangerousness, followed by the anticipation of a poor prognosis and the positive stereotype that people with schizophrenia are particularly creative and intelligent. Least common is the belief that people with schizophrenia are to be blamed for their illness. Similar findings have been reported from a representative survey conducted in the United Kingdom in 1998, where the stereotype components derived from the work of Hayward and Bright had also been assessed (Crisp et al. 2000). Although there are some differences with regard to prevalence, with perceived dangerousness and unpredictability being more frequently observed in the United Kingdom (which may be due to differences in the methods used), the rank order of the various components of the stereotype of schizophrenia is the same in both studies.

As concerns the effect of the stereotype on the two types of discrimination, there are some similarities and differences. There is a relatively close association between perceived dangerousness on the one hand and the preference for social distance as well as the acceptance of

structural discrimination of people with schizophrenia on the other. The anticipation of a poor prognosis increases the tendency to discriminate against such people, while the belief that they are particularly gifted has the opposite effect on the desire for social distance and the acceptance of regulations disadvantaging those suffering from this illness. The remaining two stereotype components show marked differences: endorsing the view that people with schizophrenia are unpredictable and incompetent has the strongest impact on the desire for social distance, while it has practically no effect on the public's opinion about structural discrimination. Exactly the opposite holds true for attributing responsibility for the development of the illness to those suffering from it; this is particularly closely associated with the acceptance of structural discrimination but plays no role with regard to the preference for social distance.

Our findings have to be viewed in the light of some limitations. Both measures for discrimination are attitudinal, not behavioral. Therefore, our study is examining the association between two sets of attitudes, not attitudes and actual discriminatory practices. However, as concerns the preference for social distance expressed by the respondents, which served as proxy for behavioral intentions to distance oneself from people with schizophrenia, the results of a recent meta-analysis showing that there is a substantial association between attitudes and behavior are quite encouraging (Kraus 1995). As concerns the acceptance of structural discrimination, the relationship with discriminatory practices is certainly more complex. Here, a study with policy makers might provide further insight into the relationship between attitudes and practices. Another limitation that applies to virtually all attitudinal research is that the responses of those questioned might have been influenced by social desirability. This response bias may be more relevant with regard to the data on the prevalence of the various stereotype components as with regard to the relationship between stereotype and discrimination, because one can assume that both might have been subjected to social desirability in a similar way.

Our findings have some implications for the conceptualization of the stigma attached to schizophrenia. First, the fact that a substantial amount of variance can be explained by the stereotype components included in our model lends support to the notion that in the course of the "stigma process" (Link et al. 1997) labeled persons are linked through dominant cultural beliefs to negative stereotypes, which in turn leads to social discrimination (Link and Phelan 2001). Second, our findings show that the various stereotype components defined by Hayward and Bright (1997) are not equally present in schizophrenia. Rather, there is a pronounced emphasis on the perceptions of unpredictability/incompetence and dangerous-

ness, while other facets of the stereotype are less prevalent. As Crisp et al. (2000) have already demonstrated, the configuration of the stereotype of other disorders may differ completely from that of schizophrenia. For example, people with alcoholism appear to be much more likely to be blamed for their illness. Third, the need for a detailed analysis of the special features of the stigma attached to a particular disorder is also underlined by the finding that the different stereotype components have different effects on the public's readiness to discriminate against people with schizophrenia. Moreover, they have, at least in part, different effects on the different forms of discrimination. It seems quite plausible that those who perceive people with schizophrenia as being unpredictable express a particularly strong preference for social distance, while those who tend to blame people with schizophrenia for their illness are most in favor of regulations that are to the patients' disadvantage. Finally, it seems important to add the notion of a close relationship between "genius" and "madness" as a positive component to the stereotype of schizophrenia in view of the great impact it has on discrimination; as concerns the desire for social distance, the positive effect of the creativity component almost compensates for the negative effect of perceived dangerousness.

Our findings also have implications for the planning of interventions aimed at reducing discrimination related to schizophrenia. Our study documents the importance of the perceptions of unpredictability and dangerousness as regards both their prevalence among the general public as well as their impact on the readiness to distance oneself from people with schizophrenia. Efforts aimed at reducing the rejection of those people in interpersonal relationships and facilitating their access to social roles should, thus, primarily focus on this issue, trying to decrease feelings of insecurity and fear. This may be achieved by providing adequate information about the risk people with schizophrenia pose for the public. This implies that, rather than reports on findings from recent epidemiological studies indicating a moderate increase of relative risk among people with schizophrenia, greater emphasis should be put on informing the public about the attributable risk, which, according to recent studies, is quite small (Arboleda-Flórez et al. 1998). This concept may also prove to be more suitable for antistigma interventions because, as indicated by our findings, it refers closely to public misconceptions of the danger posed by the mentally ill for society. However, even more important than providing adequate information may be facilitating contact between the public and people with mental illness, because those who are familiar with mental illness are less likely to believe that the mentally ill are dangerous and unpredictable. These people also react less with fear and, conse-

quently, express less desire for social distance (Corrigan et al. 2001; Angermeyer et al. 2004). In fact, an educational intervention in secondary schools in Germany whose key element was meeting a person with schizophrenia, produced a significant reduction of stereotypes of people with schizophrenia (one of them being that people with schizophrenia are dangerous) and a decrease of students' preference for social distance (Schulze et al. 2003). Similar findings are also reported from educational interventions in secondary schools as well as with the police force in England that followed the same principle (Pinfold et al. 2003a, 2003b).

As we have seen, the situation is somewhat different with regard to the public attitudes toward structural discrimination. While the perception of dangerousness also plays a role here, as with social distance, the attribution of the responsibility for the development of the illness has the strongest impact. Therefore, reducing the degree to which patients (and their relatives) are blamed should be a high priority for interventions aimed at reducing the acceptance of structural discrimination. However, it is still controversial how this may be achieved. Educating the public about the biological nature of schizophrenia, as is common practice in current antistigma programs, may not necessarily lead to more acceptance by the public. This is suggested by recent studies showing that people who endorse biological causes tend to distance themselves more from people with schizophrenia (Read and Harré 2001; Angermeyer et al. 2003).

In conclusion, we hope to have demonstrated the usefulness of the theoretical concepts applied in this study. We want to emphasize the need for differentiation between the different components of stigma (e.g., stereotype, discrimination) as well as within these components (e.g., the various facets of stereotypes and discrimination). This is both theoretically and practically important. Antistigma efforts may prove successful only if they take into account the complexity of the stigma process and are targeted at those factors that, as has been shown by empirical research, are of primary importance.

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The Authors

Matthias C. Angermeyer, M.D., is Professor of Psychiatry, Department of Psychiatry, University of Leipzig, Germany. Herbert Matschinger, Ph.D., is Senior Researcher, Department of Psychiatry, University of Leipzig, Germany.