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### Sampling strategy

Surveys of scientists to date have used a variety of sampling schemes, each with a specific profile of advantages and disadvantages. Studies have sampled scientists on the basis of their affiliation with research organizations (1–4), their membership in professional associations (5, 6), their listing in a directory of scientists (7, 8), or their visibility in the media (9–12). An important consideration regarding our sampling strategy was that it must allow a rigorous comparison of researchers employed in different countries.

The selection of countries included in this study—France, Germany, Japan, Great Britain and United States—was based on considerations of relevance, expected variation and comparability. At the time, when the decision was made, these five countries were the world's largest producers of scientific knowledge in terms of R&D expenditure and peer-reviewed scientific papers published (13). Existing evidence suggested that we would find variance in communication attitudes and behaviors across these countries. Germany, for example, has envied the United States' and Great Britain's "Public Understanding of Science" movements and has used them as models for a similar program to motivate research organizations and individual researchers to engage more fully in public communication (14). German journalists believe that US researchers are more open and motivated to talk about their research than German or (continental) European researchers at large (15). Case studies, furthermore, have indicated differences between Germany and France regarding the public role of scientists (16). There is, thus, the perception among researchers, research managers and science journalists, as well as some social-scientific evidence, of cross-national differences regarding the amount and quality of researchers' involvement in public science communication.

While on the one hand there is reason to believe that researchers in the countries under scrutiny differ in their interactions with the media, these countries, on the

other hand, are similar enough in other respects—e.g., role of the public and the media for policy-making, science-based economies, and international orientation and competitiveness of research communities—to allow meaningful comparisons.

For a cross-national survey it is crucial that the sampling scheme be applied in exactly the same way to the research communities of all countries involved in the survey. Unlike research organizations, associations or directories, disciplinary scientific communities are international networks of peers dealing with the same research questions, attending the same conferences and publishing in the same international journals. Sampling members of scientific communities and then splitting the sample by country thus seemed the most appropriate method to make sure that any cross-national differences found would not be the result of country-dependent sampling bias. As a practical requirement, a sampling strategy also needs to yield information detailed enough to provide not only home country but also contact information to facilitate the survey process itself.

Since the relationship of scientists with the mass media will vary across disciplines and research fields—the media being more interested in innovative therapies for cancer than in theoretical mathematics, for example—a cross-cultural comparison based on samples of scientists from heterogeneous fields may find differences that are not caused by cultural variance but by different disciplinary structures of the national samples. While it would be preferable to cover a wide area of science for reasons of generalization, the precision and conclusiveness of the comparison may be compromised if the structure of research in the different countries should differ.

We, therefore, decided to focus on biomedicine and to sample authors of peer-reviewed journal articles in two clearly defined research fields, thus enabling us not only to compare countries but also to check whether the cross-national differences found hold true across research fields. The two research fields selected—epidemiology and stem cell research—are part of the biomedical field but differ in their relationship to the social context. They are both connected to public discourse, though in different ways: Epidemiology is relevant for public health and offers advice to policy-makers and members of the public, while stem cell research raises hope for new therapies but generates controversy in some countries over the use of human embryonic stem cells. It is important to note, however, that our stem cell sample is not limited to the (relatively few) researchers using human embryonic stem cells but, rather, covers the broader field of stem cell research. The epidemiology research field was further narrowed down to research dealing with the epidemiology of three groups of diseases: heart diseases, cancer and stroke.

The survey sample was constructed in a multi-step procedure:

- First, we selected relevant publications in the two research fields by a query of the PubMed database. This database is provided by the U.S. National Library of Medicine and the U.S. National Institutes of Health. It is comprehensive in the biomedical field and provides a detailed indexing of individual articles by means of the Medical Subject Headings (MeSH) indexing system. We relied on the MeSH indexing in identifying the research subject and used the following search strings:

"Stem Cells"[MAJR] AND  
 Journal Article[PT] AND  
 (USA [AD] OR Japan [AD] OR Germany [AD] OR France [AD] OR United Kingdom [AD] OR  
 Great Britain [AD] OR England [AD] OR UK [AD] OR GB [AD]) AND  
 ("2002/01/01"[PDAT] : "2004/12/31"[PDAT]) AND  
 ("1900/01/01"[MHDA] : "2004/08/16"[MHDA])

and

("Heart Diseases/epidemiology"[MAJR] OR "Neoplasms/epidemiology"[MAJR] OR "Cere-  
 brovascular Accident/epidemiology"[MAJR]) AND  
 Journal Article[PT] AND  
 (USA[AD] OR Japan[AD] OR Germany[AD] OR France[AD] OR United Kingdom[AD] OR  
 Great Britain[AD] OR England[AD] OR UK[AD] OR GB[AD]) AND  
 ("2002/01/01"[PDAT] : "2004/12/31"[PDAT]) AND  
 ("1900/01/01"[MHDA] : "2004/09/18"[MHDA])

The search results thus comprised journal articles published in the years 2002–2004 and indexed before 17 August 2004 for the stem cell sample and before 19 September 2004 for the epidemiology sample, the dates on which the queries were run. The search resulted in 4,864 stem cell articles and 5,175 epidemiology articles.

- We listed all authors and co-authors of the articles identified by the query and condensed the lists by pooling multiple entries of the same author. We then excluded researchers who were (co-)authors of only one article, assuming that this probably indicated a peripheral connection to the respective research field. This resulted in lists of 3,684 stem cell researchers and 4,310 epidemiologists.
- Since PubMed provides only the postal address of the first author, an extensive online search was required to find postal addresses of those researchers who remained in the sample but had never been first author. Excluding researchers resident in countries other than the five under study and those researchers for which we could not find an address, the resulting list was comprised of 7,669 researchers (3,571 stem cell researchers, 4,098 epidemiologists). Nearly 58%

of them resided in the USA, 19% in Japan and 23% in one of the three European countries.

- Since the main goal was a cross-national comparison, we drew simple random samples in each field from the lists of the US and Japanese researchers, using random numbers, but included all identified researchers from the three European countries in order to partly balance the unequal sizes of the national research communities. Our aim was to obtain at least 100 completed questionnaires in each stratum defined by the combination of country and research field. The final gross sample consisted of 3,723 researchers (1,942 stem cell researchers, 1,781 epidemiologists) to whom questionnaires were mailed (Table S1).

### **Implementation of the survey and response rate**

The survey was implemented in the five countries by national teams, headed by the respective authors of this article. In each country the same methodological scheme was used with only minor modifications to accommodate national styles. All communications with interviewees mentioned the international scope of the survey, but in each country a research organization of that specific country served as the originator of the questionnaires, and their letterheads and logos were used for the communication with interviewees:

France:	SHADYC – Sociologie, histoire, anthropologie des dynamiques culturelles (CNRS – EHESS), Marseille
Germany:	Program Group Humans-Environment-Technology, Research Center Juelich, Juelich
Japan:	Department of Psychology, Kansai University, Osaka
UK:	Department of Science and Technology Studies, University College London, London
USA:	School of Journalism & Mass Communication, University of Wisconsin-Madison, WI

The questionnaire, originally developed in English, was translated into German, French and Japanese and pre-tested in each country. Following the general principles of the Tailored Design Method (17) in the implementation of the survey, we used an elaborate schema for contacting the researchers, consisting of up to five steps (18):

1. Sending a postcard (or email in the case of France) to the researchers in our sample announcing the survey and asking for their cooperation.
2. First mailing of the questionnaire along with a cover letter that briefly described the topic of the survey and the research goals in general terms and assured complete anonymity in data analysis and reporting of results.
3. Mailing of a postcard (or email in the case of France) thanking those interviewees who had already completed and returned their questionnaire and reminding those who had not yet responded to do so.
4. Mailing of another copy of the questionnaire along with a reminder.
5. Sending (by email if email address was known) a final reminder and “plea” for participation. In the United States, the last e-mail included a link to an online version of the questionnaire.

The questionnaires were mailed to researchers in the five countries between May 2005 and November 2005, taking into account differing national holidays and academic schedules. A total of 1,354 completed questionnaires was returned—the last ones in February 2006.

During field work a small proportion of the questionnaires were returned by secretaries or colleagues because the addressed researchers had moved, were retired or were otherwise not available. In some cases the addressees themselves indicated that individuals were clearly not eligible, i.e., were not valid members of the sample because they were either not a researcher or worked in a completely different research field than epidemiology or stem cell research. Most of these cases are probably due to a confusion of names during the process of finding addresses for the co-authors. (That process proved to be quite challenging in some cases, particularly for the Japanese sample, where many researchers have the same last names.) If questionnaires were returned because the researchers had moved to a new job, we tried to locate the new address and to resend the questionnaire. Cases that could not be resolved that way were considered non-eligible along with the cases where addressees indicated individuals were not valid sample members. A total of 1,354 completed interviews was returned. With the exception of epidemiologists in France ( $n=87$ ) all sub-samples exceed the target size of  $n=100$  (Table S1).

The average response rate across countries and research fields is 43% with noticeable differences between countries for which we do not find a methodological explanation (Table S1). As was the case for this study, a methodological study comparing response rates in a cross-national mail survey of business managers

found higher rates in the UK (51%) than in the USA (38%) (19). The clearly lower response rate in the USA probably reflects a greater reluctance of US professionals to participate in mail surveys. In their survey of US scientists, Hartz & Chappell (6) reported a response rate of 34%—similar to that in our US sample. In contrast, the recent online survey of British scientists by the Royal Society found a response rate of 52% (4) and a German mail survey of scientists conducted in 1993 reached a response rate of 50% (11). The response rates of our survey for different countries thus resemble the figures of comparable previous studies.

The sampling schema implicitly defines the population of our survey as the productive (publishing) core members of the scientific community in the selected research fields. Compared to the population of scientists defined by employee lists of research organizations in other studies (e.g., 1–4) our approach identifies and surveys those researchers that have proven by publications to be active as knowledge producers in the respective research fields. Our sample thus consists mainly of experienced academic researchers. The majority of respondents confirmed in the survey that their research is related to epidemiology or stem cells (89%), that they are employed by universities, hospitals or publicly funded research institutes (89%), that “research” is their primary or a secondary professional activity (91%), and that they have published more than 25 peer-reviewed papers (76%). On average, the respondents were 48.5 years old.

Since our overall response rate is 43% one might be concerned about bias due to the possibility that the non-responding researchers differ systematically from the survey participants in their opinions, attitudes, experiences and assessments addressed in our questionnaire. One might suspect, for example, that people with higher positions are busier and, thus, less likely to return questionnaires. One might also suspect that those who find interactions with the media important, or have a lot of own experiences with them, will more readily answer our questions. An important question is whether people with positive or negative experiences and attitudes are equally likely to participate. And finally one might think that people with either positive or negative experiences are more prone to answer than those with ambivalent or neutral experiences.

While it is not possible to determine this bias unequivocally, there is a way to make a rough estimation of likely bias by comparing early and late responders, assuming that the latter are more similar to the non-responders than the early responders (20). This is plausible if we assume that the response likelihood depends on motivation and (time) constraints and that both are continuous variables. Early responders will have high motivation/low constraints, non-responders in comparison low motivation/high constraints. The assumption is that late responders tend to

have medium motivation/medium constraints, so that they need some reminders until they finally return their questionnaire. If the surveyed opinions, attitudes, experiences, etc., are correlated with motivation/constraints, a difference between early and late responders points to a possible bias caused by the imperfect response rate.

Roughly 25% of the respondents returned their questionnaire "late," i.e. after the second mailing. To assess a possible response bias we compared these later responders with the early responders who returned their questionnaire before the second mailing. We checked for differences in a number of variables that describe the respondents in terms of age, gender, career level, number of publications and organizational management role. Using  $\chi^2$  and t-tests to compare early and later responders, we found no significant differences in these variables either for the total sample or for any individual country sample.

We then looked at some core variables of our survey: the amount of contact with journalists, the general evaluation of media contacts, the perceived impact of media contacts on one's career, and the opinion that researchers "should stay well clear of the economic, political and public sphere." While there was no significant effect regarding the amount of contacts for the total sample or any individual country sample, we did find some significant differences for other variables. In the US sample, researchers agreeing that they should avoid the economic, political and public sphere are somewhat more likely to have responded late. The same is true for US researchers saying that media contacts have "no impact at all" on their scientific career. The US sample, thus, is likely to mildly over-represent researchers who see the relevance of the public sphere and the necessity to interact with it. We did not observe a similar effect in other countries nor was it significant in the total sample.

A larger difference, and possible bias, was found in the French sample, and this turned out to be significant in the total sample, too (but only because of the French cases). Researchers evaluating media contacts positively (as compared to those reporting "balanced" experiences) were more likely to respond early. It is, thus, plausible that the French results are somewhat biased towards a more positive picture of the researchers' experiences with the media. It should be noted, however, that even among late responders the experiences were rated mostly positive. The bias would, therefore, not lead to different conclusions regarding the researchers' evaluation of their interactions with the media.

We conclude from our comparison of early and later responders that, while there are some indications of modest sampling bias, there is no reason to believe that the whole sample is consistently biased towards positive or negative experiences

or is causing us to overestimate the frequency of researchers' interactions with the media. The key findings of our study thus appear valid even when considering possible response bias.

## **Index construction**

### **Index “Personal enjoyment of public communication”**

Respondents were asked to rate their level of liking or disliking for six possible public communication activities. The question read: “[...] please indicate for each activity how much you personally would enjoy engaging in this activity.” The activities were:

- “Explaining your research and its results to the public”
- “Describing the possible practical uses of your research”
- “Evaluating political decisions based on your professional expertise”
- “Giving practical advice based on your professional expertise”
- “Discussing the social and ethical aspects of your research”
- “Contributing to public debate about policy related to science”

On scales ranging from 1 to 5, with the endpoints labeled “Dislike intensely” and “Enjoy very much,” respectively, respondents rated each activity. Factor analysis and reliability analysis (Cronbach’s alpha = 0.84) indicated that all six items form one main dimension that we labeled “Personal enjoyment of public communication.” We constructed a scale with a theoretical value range of 6 to 30 by summing up the six ratings (scale mean = 21.6, standard deviation = 4.5).

In Fig. S2 and Table S5 an ordinal version of this scale is used. It was derived from the original scale by pooling the scale values into three categories: low/medium (6.00–17.99), high (18.00–23.99) and very high (24.00–30.00). The category “low/medium” comprises a wider interval than the other two categories because of the relatively small number of cases with values between 6 and 18.

### **Index “Assessment of media contacts”**

The scientists’ assessment of their own media contacts, based on their responses to the six positive and six negative responses shown in Table S7, was used to construct a Likert scale “Assessment of media contacts.” Factor analysis and reliability analysis (Cronbach’s alpha = 0.86) suggested that the 12 responses share a common dimension that can be interpreted as general evaluation of the interactions with journalists. After appropriately recoding the values of negatively phrased

items the 12 values were summed to form a Likert scale with a theoretical value range of -24 to +24 (scale mean = 8.1, standard deviation = 7.3).

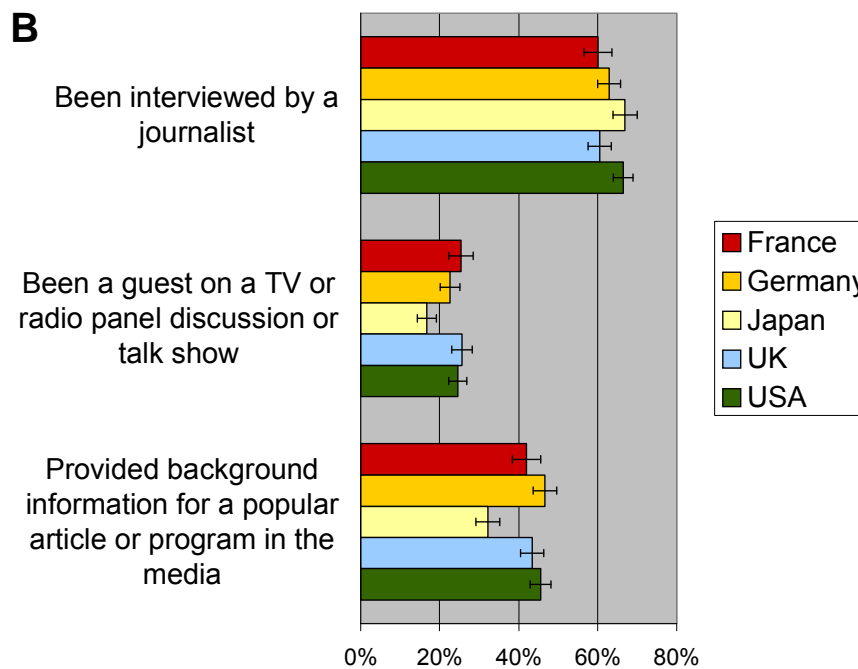
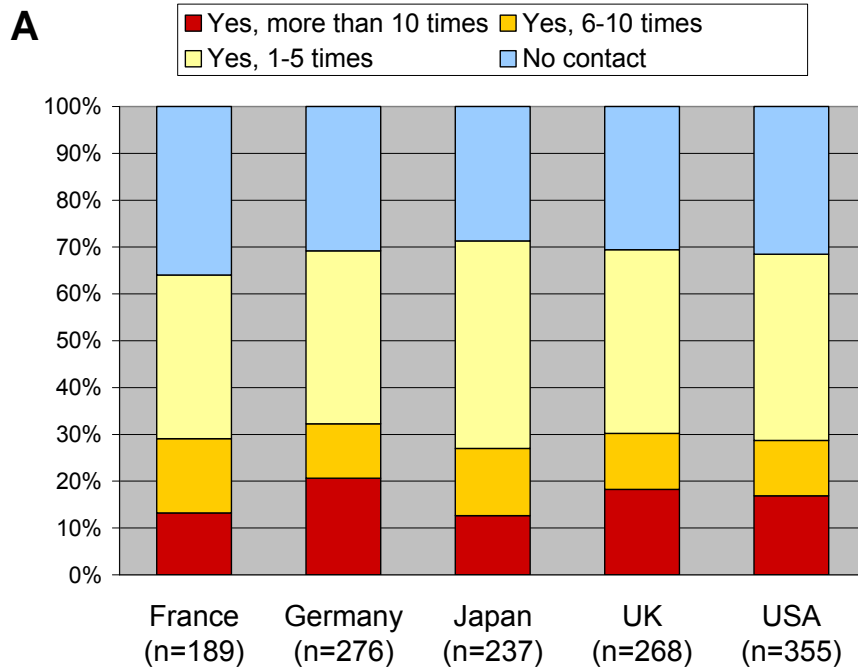
### **Index “Assessment of media coverage of science”**

Respondents were asked to assess the “media coverage of scientific topics in general” on four evaluative characteristics: accuracy, use of credible sources, hostility to science and comprehensiveness (Table S9). Factor analysis and reliability analysis showed that all four items are indicators of a general evaluation of mass media science coverage. The only moderate reliability (Cronbach’s alpha = 0.61) is partly due to the small number of items. We combined responses into a scale with a value range of -8 to +8 by summing up the four values after appropriate recoding of the two negative characteristics (scale mean = 0.3, standard deviation = 2.6).

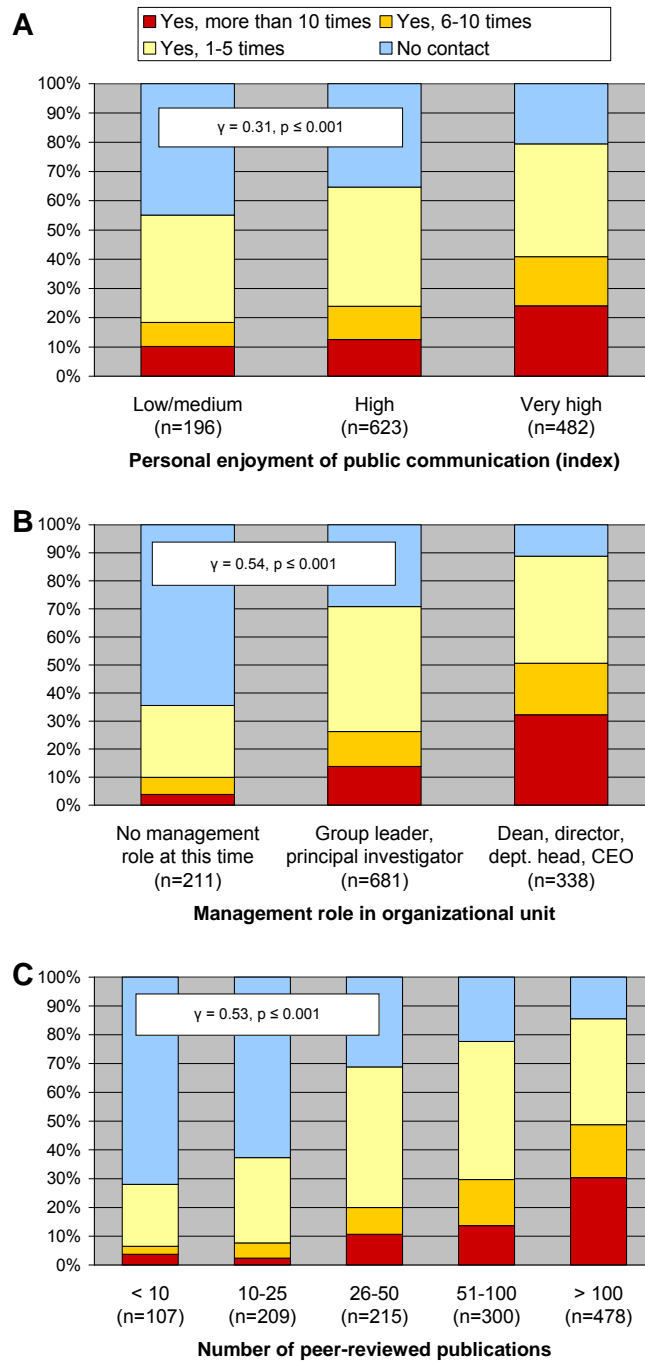
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**Fig. S1:** Frequency of scientists' media contacts by country. **(A)** Distribution of answers to the question "In the past 3 years, have you had professional contact with journalists from the general mass media face-to-face, by phone, or by mail/fax/e-mail?". **(B)** Proportion of respondents checking the respective answer categories of the question: "What kind of contact with the media have you had in the past 3 years? (Check all alternatives that apply.)". See Tables S2 and S3 for a breakdown of responses by country and research field.



**Fig. S2:** Personal attitude towards public communication (A), organizational management role (B), and number of peer-reviewed publications (C) as predictors of frequency of media contacts. Gamma is used to quantify the strength of the statistical associations between the ordinal variables. The associations illustrated by the graphs for the total sample are by and large also observed for subgroups (Table S5). The enjoyment index used in (A) as indicator of personal attitude was constructed from answers about personal enjoyment of six different aspects of public communication (supporting online text).

**Table S1.** Sample size and response rate by country and research field.

		Gross sample	Non-eligible cases <sup>a</sup>	Eligible cases	Valid responses	Response rate <sup>b</sup>
France	Stem cell researchers	260	28	232	106	45.7%
	Epidemiologists	232	30	202	87	43.1%
	<b>Total</b>	<b>492</b>	<b>58</b>	<b>434</b>	<b>193</b>	<b>44.5%</b>
Germany	Stem cell researchers	366	50	316	167	52.8%
	Epidemiologists	257	21	236	116	49.2%
	<b>Total</b>	<b>623</b>	<b>71</b>	<b>552</b>	<b>283</b>	<b>51.3%</b>
Japan	Stem cell researchers	351	110	241	124	51.5%
	Epidemiologists	322	80	242	115	47.5%
	<b>Total</b>	<b>673</b>	<b>190</b>	<b>483</b>	<b>239</b>	<b>49.5%</b>
UK	Stem cell researchers	338	45	293	143	48.8%
	Epidemiologists	343	45	298	138	46.3%
	<b>Total</b>	<b>681</b>	<b>90</b>	<b>591</b>	<b>281</b>	<b>47.5%</b>
USA	Stem cell researchers	627	104	523	166	31.7%
	Epidemiologists	627	53	574	192	33.4%
	<b>Total</b>	<b>1254</b>	<b>157</b>	<b>1097</b>	<b>358</b>	<b>32.6%</b>
All countries	Stem cell researchers	1942	337	1605	706	44.0%
	Epidemiologists	1781	229	1552	648	41.8%
	<b>Total</b>	<b>3723</b>	<b>566</b>	<b>3157</b>	<b>1354</b>	<b>42.9%</b>

<sup>a</sup> No researcher, deceased or no longer active, moved abroad, no valid address found

<sup>b</sup> Response rate = 100 \* (number of valid responses / number of eligible cases)

**Table S2.** Frequency of scientists' media contacts by country and research field. Distribution of responses to the question: "In the past 3 years, have you had professional contact with journalists from the general mass media face-to-face, by phone or by mail/fax/e-mail?"

	Total	By country					By research field		By country x research field									
		FRA	GER	JAP	UK	USA	SCR	EP	Stem cell research					Epidemiology				
									FRA	GER	JAP	UK	USA	FRA	GER	JAP	UK	USA
%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
No contact	31	36	31	29	31	32	37	25	44	38	33	36	34	26	21	24	25	29
Yes, 1-5 times	39	35	37	44	39	40	39	39	34	37	48	40	39	36	37	41	38	41
Yes, 6-10 times	13	16	12	14	12	12	11	15	12	7	13	8	13	21	18	16	16	11
Yes, more than 10 times	17	13	21	13	18	17	13	20	10	18	6	16	14	17	25	19	21	20
Total (%)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Valid cases (n)	1325	189	276	237	268	355	689	636	102	162	124	135	166	87	114	113	133	189
No answer (n)	29	4	7	2	13	3	17	12	4	5	0	8	0	0	2	2	5	3
Sample size (n)	1354	193	283	239	281	358	706	648	106	167	124	143	166	87	116	115	138	192
$\chi^2$ test		$\chi^2=14.0, df=12, p=.301$					$\chi^2=29.4, df=3, p=.000$		$\chi^2=18.0, df=12, p=.116$					$\chi^2=9.0, df=12, p=.701$				

**Table S3.** Proportion of scientists having had different kinds of media contact by country and research field. Percentage of affirmative responses to the answer categories of the question: “What kinds of contact with the media have you had in the past 3 years? (Check all alternatives that apply.)”

	Total	By country						By research field			By country x research field												
		FRA	GER	JAP	UK	USA	$\chi^2$ test	SCR	EP	$\chi^2$ test	Stem cell research						Epidemiology						
											FRA	GER	JAP	UK	USA	$\chi^2$ test	FRA	GER	JAP	UK	USA	$\chi^2$ test	
%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Been interviewed by a journalist (face-to-face, by phone, by mail, email or fax)	64	60	63	67	60	66	$\chi^2=4.7$ df=4 p=.321	57	71	$\chi^2=25.3$ df=1 p=.000	49	55	63	52	65	$\chi^2=10.3$ df=4 p=.035	74	74	71	69	68	$\chi^2=2.1$ df=4 p=.723	
Been a guest on a TV or radio panel discussion or talk show	23	25	23	17	26	25	$\chi^2=7.5$ df=4 p=.112	19	27	$\chi^2=13.2$ df=1 p=.000	17	19	13	20	25	$\chi^2=6.8$ df=4 p=.148	36	28	21	32	24	$\chi^2=7.6$ df=4 p=.106	
Provided background information for a popular (i.e., nonscholarly) article or program in the media	42	42	47	32	43	46	$\chi^2=13.8$ df=4 p=.008	34	52	$\chi^2=44.8$ df=1 p=.000	29	37	27	34	40	$\chi^2=7.0$ df=4 p=.134	57	61	38	54	51	$\chi^2=14.0$ df=4 p=.007	
Sample size (n)	1354	193	283	239	281	358		706	648		106	167	124	143	166		87	116	115	138	192		

**Table S4.** Perceived impact of media contacts on respondents' career. Distribution of responses to the question: "Consider the totality of your media contacts over your career. How great has their positive or negative impact been on you professionally?"

	Total	By country					By research field		By country x research field									
		FRA	GER	JAP	UK	USA	SCR	EP	Stem cell research					Epidemiology				
									FRA	GER	JAP	UK	USA	FRA	GER	JAP	UK	USA
%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Mostly positive	46	48	43	41	45	54	41	51	41	42	32	40	50	53	44	49	50	56
Relatively balanced	24	10	27	45	23	17	25	24	7	22	51	24	19	13	31	39	22	15
Mostly negative	3	4	3	1	2	5	3	3	4	4	2	1	5	5	1	0	2	5
No impact at all	26	38	28	13	30	25	30	23	48	32	15	35	27	30	24	12	26	24
Total (%)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Valid cases (n)	896	120	187	165	183	241	429	467	56	98	82	85	108	64	89	83	98	133
No answer (n)	14	1	4	4	3	2	7	7	1	3	1	1	1	0	1	3	2	1
Sample size (n) <sup>a</sup>	910	121	191	169	186	243	436	474	57	101	83	86	109	64	90	86	100	134
$\chi^2$ test		$\chi^2=73.6$ , df=12, p=.000					$\chi^2=9.3$ , df=3, p=.026		$\chi^2=51.4$ , df=12, p=.000					$\chi^2=31.5$ , df=12, p=.002				

<sup>a</sup> Only respondents reporting media contact(s) in the past three years.

**Table S5.** Statistical associations of three possible predictors with frequency of media contacts by country and research field. Frequency of media contacts is operationalized by the survey question shown in Table S2. The index “Personal enjoyment of public communication” is explained in the supporting online text. The scientists’ management role in their organizational unit was determined by the question “Which term best describes your current management role in your unit?” with response categories “Dean, director, department head, CEO”, “Group leader, principal investigator” and “No management role at this time”. The number of peer-reviewed publications was asked by the question “So far in your career, how many peer-reviewed journal articles, books, or book chapters have you published as author or coauthor?” with response categories “Fewer than 10”, “10–25”, “26–50”, “51–100” and “More than 100”.

	Statistical association Gamma ( $\gamma$ ) with frequency of scientists' media contacts <sup>a</sup>																	
	Total	By country					By research field		By country x research field									
		FRA	GER	JAP	UK	USA	SCR	EP	Stem cell research					Epidemiology				
									FRA	GER	JAP	UK	USA	FRA	GER	JAP	UK	USA
$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$		
Personal enjoyment of public communication (index)	<b>0.31</b>	<b>0.37</b>	<b>0.26</b>	<b>0.22</b>	<b>0.32</b>	<b>0.35</b>	<b>0.31</b>	<b>0.34</b>	<b>0.38</b>	<b>0.33</b>	0.21	<b>0.33</b>	<b>0.29</b>	<b>0.37</b>	<b>0.27</b>	0.20	<b>0.32</b>	<b>0.43</b>
Management role in organizational unit	<b>0.54</b>	<b>0.57</b>	<b>0.66</b>	<b>0.46</b>	<b>0.47</b>	<b>0.56</b>	<b>0.61</b>	<b>0.48</b>	<b>0.58</b>	<b>0.77</b>	<b>0.54</b>	<b>0.63</b>	<b>0.55</b>	<b>0.61</b>	<b>0.51</b>	<b>0.39</b>	<b>0.37</b>	<b>0.57</b>
Number of peer-reviewed publications	<b>0.53</b>	<b>0.53</b>	<b>0.58</b>	<b>0.52</b>	<b>0.54</b>	<b>0.50</b>	<b>0.61</b>	<b>0.41</b>	<b>0.57</b>	<b>0.69</b>	<b>0.70</b>	<b>0.58</b>	<b>0.52</b>	<b>0.42</b>	<b>0.37</b>	<b>0.33</b>	<b>0.48</b>	<b>0.48</b>
Sample size (n)	1354	193	283	239	281	358	706	648	106	167	124	143	166	87	116	115	138	192

<sup>a</sup> Coefficients significant at the 5%-level ( $p < 0.05$ ) are printed bold.

**Table S6.** Assessment of the respondents' latest media contact by country and research field. Distribution of responses to the question: "Think back to the latest occasion when you were mentioned, quoted, or interviewed by the media. [...] What was your own general response to that latest appearance in the media?"

	Total	By country					By research field		By country x research field									
		FRA	GER	JAP	UK	USA	SCR	EP	Stem cell research					Epidemiology				
									FRA	GER	JAP	UK	USA	FRA	GER	JAP	UK	USA
%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Mostly pleased	57	53	60	47	55	64	55	59	45	61	48	53	60	60	60	47	58	67
Mostly dissatisfied	6	8	5	5	6	7	6	7	9	2	4	10	6	7	8	7	2	9
Relatively balanced	18	13	15	32	18	11	18	17	13	18	32	18	11	14	12	33	19	11
Mostly neutral	19	26	20	15	21	18	22	17	34	19	17	20	23	19	20	13	22	13
Total (%)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Valid cases (n)	863	105	183	165	177	233	409	454	47	94	82	80	106	58	89	83	97	127
No answer (n)	47	16	8	4	9	10	27	20	10	7	1	6	3	6	1	3	3	7
Sample size (n) <sup>a</sup>	910	121	191	169	186	243	436	474	57	101	83	86	109	64	90	86	100	134
$\chi^2$ test		$\chi^2=37.9$ , df=12, p=.000					$\chi^2=3.4$ , df=3, p=.338		$\chi^2=25.2$ , df=12, p=.014					$\chi^2=27.0$ , df=12, p=.008				

<sup>a</sup> Only respondents reporting media contact(s) in the past three years.

**Table S7.** Scientists' differentiated evaluations of their media contacts. The question read "Scientists have a variety of experiences when serving as media sources. What are your typical reactions to encounters you have had with journalists in the past 3 years?"

	Total	By country						By research field			By country x research field											
		FRA	GER	JAP	UK	USA	ANOVA	SCR	EP	ANOVA	Stem cell research					Epidemiology						
		mean	mean	mean	mean	mean		mean	mean		mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	ANOVA	
I was able to get my message out to the public <sup>a</sup>	0.72	0.69	0.87	0.54	0.73	0.72	F=3.4, df=4 p=.010	0.69	0.74	F=0.6, df=1 p=.434	0.66	0.85	0.49	0.67	0.74	F=2.0, df=4 p=.101	0.72	0.90	0.58	0.78	0.71	F=1.6, df=4 p=.167
The journalists treated me with little respect <sup>a</sup>	-1.09	-1.22	-1.20	-0.95	-1.12	-1.00	F=2.3, df=4 p=.060	-1.08	-1.10	F=0.1, df=1 p=.791	-1.31	-1.16	-0.93	-0.99	-1.06	F=1.3, df=4 p=.256	-1.15	-1.24	-0.98	-1.24	-0.94	F=2.1, df=4 p=.078
The information I gave was inaccurately used <sup>a</sup>	-0.56	-0.42	-0.73	-0.51	-0.43	-0.62	F=2.6, df=4 p=.034	-0.65	-0.47	F=5.9, df=1 p=.016	-0.75	-0.83	-0.49	-0.52	-0.65	F=1.6, df=4 p=.166	-0.13	-0.62	-0.53	-0.35	-0.60	F=2.7, df=4 p=.028
The journalists asked the right questions <sup>a</sup>	0.34	0.52	0.36	0.23	0.39	0.29	F=1.8, df=4 p=.125	0.32	0.37	F=0.6, df=1 p=.431	0.57	0.35	0.15	0.35	0.27	F=1.7, df=4 p=.153	0.47	0.37	0.32	0.42	0.31	F=0.4, df=4 p=.775
I felt unsure when talking to the journalists <sup>a</sup>	-0.64	-0.99	-1.10	-0.28	-0.44	-0.51	F=18.6, df=4 p=.000	-0.66	-0.63	F=0.2, df=1 p=.661	-0.81	-1.12	-0.27	-0.50	-0.58	F=7.9, df=4 p=.000	-1.15	-1.08	-0.30	-0.39	-0.46	F=11.8, df=4 p=.000
My statements were distorted <sup>a</sup>	-0.69	-0.39	-0.97	-0.55	-0.66	-0.73	F=6.5, df=4 p=.000	-0.72	-0.66	F=0.7, df=1 p=.419	-0.56	-0.95	-0.51	-0.69	-0.76	F=2.4, df=4 p=.052	-0.25	-0.99	-0.59	-0.63	-0.69	F=4.8, df=4 p=.001
The journalists really listened to what I had to say <sup>a</sup>	0.64	0.61	0.71	0.88	0.44	0.57	F=4.9, df=4 p=.001	0.66	0.62	F=0.3, df=1 p=.612	0.83	0.64	0.91	0.46	0.54	F=2.8, df=4 p=.025	0.43	0.80	0.85	0.42	0.60	F=3.7, df=4 p=.005
I received favorable publicity <sup>a</sup>	0.60	0.40	0.80	0.72	0.44	0.57	F=7.4, df=4 p=.000	0.61	0.58	F=0.2, df=1 p=.640	0.33	0.87	0.74	0.40	0.57	F=5.6, df=4 p=.000	0.46	0.73	0.69	0.47	0.56	F=2.1, df=4 p=.083
The most important information I gave was omitted <sup>a</sup>	-0.89	-0.95	-1.21	-0.81	-0.85	-0.71	F=7.8, df=4 p=.000	-0.95	-0.85	F=2.4, df=1 p=.123	-1.06	-1.28	-0.90	-0.80	-0.73	F=5.3, df=4 p=.000	-0.85	-1.12	-0.72	-0.89	-0.70	F=3.1, df=4 p=.016
Talking to the journalist was pleasant <sup>a</sup>	0.62	0.72	0.82	0.19	0.60	0.71	F=13.2, df=4 p=.000	0.66	0.57	F=2.1, df=1 p=.152	0.70	0.87	0.23	0.70	0.74	F=6.3, df=4 p=.000	0.73	0.78	0.14	0.51	0.69	F=7.2, df=4 p=.000
My research was well-explained <sup>a</sup>	0.42	0.45	0.66	0.19	0.36	0.41	F=6.9, df=4 p=.000	0.45	0.39	F=1.0, df=1 p=.317	0.42	0.74	0.19	0.51	0.35	F=5.3, df=4 p=.000	0.48	0.57	0.20	0.23	0.47	F=3.4, df=4 p=.010
The journalists asked biased or unfair questions <sup>a</sup>	-0.92	-0.79	-1.24	-0.98	-0.66	-0.87	F=8.5, df=4 p=.000	-0.97	-0.87	F=2.4, df=1 p=.125	-1.02	-1.31	-1.00	-0.70	-0.82	F=4.8, df=4 p=.001	-0.60	-1.16	-0.95	-0.64	-0.92	F=4.9, df=4 p=.001
Index <sup>b</sup>	8.2	8.3	11.0	6.8	7.1	7.8	F=9.1, df=4 p=.000	8.4	7.9	F=0.9, df=1 p=.331	9.4	11.0	6.9	7.2	7.8	F=4.9, df=4 p=.001	7.4	10.9	6.8	7.0	7.7	F=4.5, df=4 p=.001
Sample size (n) <sup>c</sup>	910	121	191	169	186	243		436	474		57	101	83	86	109		64	90	86	100	134	

<sup>a</sup> 5-step rating scale ranging from -2 (strongly disagree) to +2 (strongly agree).

<sup>b</sup> Value range -24 to +24, higher values indicate a more positive evaluation (supporting online text).

<sup>c</sup> Only respondents reporting media contact(s) in the past three years.

**Table S8.** Scientists' concerns and perceived benefits regarding media contacts. The eight possible concerns were introduced by the question: "Regardless of whether you yourself have intersected with the media, how important to you personally are the following concerns that increase scientists' reluctance to agree to contact with the media?" The eight possible benefits were imposed asking: "How important to you personally are the following possible outcomes that make scientists feel more positive about contacts with the media?"

	Total	By country					$\chi^2$ test	By research field			$\chi^2$ test	By country x research field											
		FRA	GER	JAP	UK	USA		SCR	EP	Stem cell research					Epidemiology								
										FRA		GER	JAP	UK	USA	$\chi^2$ test	FRA	GER	JAP	UK	USA	$\chi^2$ test	
% <sup>a</sup>	% <sup>a</sup>	% <sup>a</sup>	% <sup>a</sup>	% <sup>a</sup>	% <sup>a</sup>	% <sup>a</sup>	% <sup>a</sup>	% <sup>a</sup>	% <sup>a</sup>	% <sup>a</sup>	% <sup>a</sup>	% <sup>a</sup>	% <sup>a</sup>	% <sup>a</sup>	% <sup>a</sup>	% <sup>a</sup>	% <sup>a</sup>	% <sup>a</sup>	% <sup>a</sup>	% <sup>a</sup>	% <sup>a</sup>	% <sup>a</sup>	
<b>Concerns</b>																							
Possibility of negative publicity	71	59	55	82	83	76	$\chi^2=86.3$ , df=4 p=.000	74	69	$\chi^2=4.9$ , df=1 p=.027	63	58	82	86	82	$\chi^2=49.6$ , df=4 p=.000	54	50	81	80	71	$\chi^2=42.6$ , df=4 p=.000	
Loss of valuable research time	53	45	56	59	51	52	$\chi^2=11.1$ , df=4 p=.025	55	50	$\chi^2=3.0$ , df=1 p=.082	44	60	61	56	52	$\chi^2=9.3$ , df=4 p=.054	45	50	57	45	53	$\chi^2=5.0$ , df=4 p=.291	
Unpredictability of journalists	83	81	82	81	89	81	$\chi^2=10.1$ , df=4 p=.039	84	82	$\chi^2=0.7$ , df=1 p=.389	78	85	80	91	84	$\chi^2=9.1$ , df=4 p=.058	84	79	81	88	80	$\chi^2=4.6$ , df=4 p=.327	
Possible critical reactions from peers	42	42	35	38	50	42	$\chi^2=15.2$ , df=4 p=.004	44	39	$\chi^2=3.6$ , df=1 p=.059	44	39	42	48	47	$\chi^2=3.0$ , df=4 p=.550	39	29	33	53	38	$\chi^2=18.0$ , df=4 p=.001	
Possible critical reactions from the heads of department or organization	43	43	45	41	48	39	$\chi^2=5.3$ , df=4 p=.256	46	39	$\chi^2=6.9$ , df=1 p=.009	43	50	46	49	43	$\chi^2=2.4$ , df=4 p=.669	42	38	36	46	36	$\chi^2=4.6$ , df=4 p=.332	
Possible critical reactions from the public	43	37	46	39	51	39	$\chi^2=14.9$ , df=4 p=.005	48	37	$\chi^2=16.8$ , df=1 p=.000	43	53	41	55	44	$\chi^2=8.8$ , df=4 p=.065	29	35	37	46	34	$\chi^2=8.3$ , df=4 p=.080	
Incompatibility with the scientific culture	34	37	27	34	37	36	$\chi^2=7.4$ , df=4 p=.115	35	33	$\chi^2=0.2$ , df=1 p=.623	39	28	35	38	36	$\chi^2=4.9$ , df=4 p=.303	35	27	33	36	35	$\chi^2=2.9$ , df=4 p=.569	
Risk of incorrect quotation	91	94	84	91	93	92	$\chi^2=23.4$ , df=4 p=.000	92	89	$\chi^2=2.7$ , df=1 p=.098	96	86	93	93	95	$\chi^2=13.7$ , df=4 p=.008	92	81	90	93	90	$\chi^2=12.6$ , df=4 p=.014	
<b>Benefits</b>																							
Increased visibility for sponsors and funding bodies	77	77	85	65	78	76	$\chi^2=27.8$ , df=4 p=.000	79	74	$\chi^2=6.4$ , df=1 p=.011	72	89	72	83	77	$\chi^2=18.7$ , df=4 p=.001	83	79	59	74	75	$\chi^2=18.4$ , df=4 p=.001	
A more positive public attitude towards research	93	96	98	76	96	95	$\chi^2=118.8$ , df=4 p=.000	94	91	$\chi^2=4.5$ , df=1 p=.033	96	99	76	98	98	$\chi^2=90.4$ , df=4 p=.000	95	97	76	94	92	$\chi^2=39.9$ , df=4 p=.000	
Enhanced personal reputation among peers	39	33	35	31	45	45	$\chi^2=20.8$ , df=4 p=.000	37	41	$\chi^2=1.9$ , df=1 p=.172	32	34	33	42	41	$\chi^2=5.5$ , df=4 p=.238	33	36	29	47	48	$\chi^2=16.2$ , df=4 p=.003	
Enhanced personal public reputation	46	29	47	60	44	47	$\chi^2=42.6$ , df=4 p=.000	44	49	$\chi^2=2.7$ , df=1 p=.103	24	45	62	40	46	$\chi^2=34.6$ , df=4 p=.000	36	50	59	47	48	$\chi^2=20.8$ , df=4 p=.029	
Fulfilled responsibility to account for the taxpayer's money	64	85	57	60	65	62	$\chi^2=47.7$ , df=4 p=.000	70	58	$\chi^2=19.5$ , df=1 p=.000	90	61	62	73	69	$\chi^2=31.1$ , df=4 p=.000	79	50	57	56	56	$\chi^2=20.1$ , df=4 p=.000	
Influence on public debate	85	90	90	67	91	85	$\chi^2=72.9$ , df=4 p=.000	85	84	$\chi^2=0.1$ , df=1 p=.752	90	90	71	91	83	$\chi^2=28.8$ , df=4 p=.000	91	90	63	91	86	$\chi^2=47.0$ , df=4 p=.000	
A better educated general public	92	94	95	79	95	94	$\chi^2=62.4$ , df=4 p=.000	93	91	$\chi^2=1.0$ , df=1 p=.316	96	94	77	96	98	$\chi^2=52.9$ , df=4 p=.000	91	97	81	94	92	$\chi^2=19.2$ , df=4 p=.001	
Enjoyment of interacting with journalists	24	36	14	22	25	25	$\chi^2=32.0$ , df=4 p=.000	23	24	$\chi^2=0.2$ , df=1 p=.631	35	11	23	26	26	$\chi^2=24.3$ , df=4 p=.000	37	18	21	25	24	$\chi^2=10.2$ , df=4 p=.037	
Sample size (n)	1354	193	283	239	281	358		706	648		106	167	124	143	166		87	116	115	138	192		

<sup>a</sup> Percent of respondents who consider a concern or benefit "very important" or "somewhat important" as motivation.

**Table S9.** Evaluation of media coverage of scientific topics by country and research field. The question read: “Thinking of mass media such as newspapers, radio and television, please indicate your agreement or disagreement with the following statements? Media coverage of scientific topics in general usually ...”

	Total	By country						By research field			By country x research field											
		FRA	GER	JAP	UK	USA	ANOVA	SCR	EP	ANOVA	Stem cell research					Epidemiology						
		mean	mean	mean	mean	mean		mean	mean		mean	mean	mean	mean	mean	ANOVA	mean	mean	mean	mean	mean	ANOVA
is inaccurate <sup>a</sup>	0,06	-0,06	-0,23	0,34	0,37	-0,07	F=19.9, df=4 p=.000	0,05	0,07	F=0.1, df=1 p=.798	-0,10	-0,23	0,23	0,44	-0,03	F=10.4, df=4 p=.000	-0,02	-0,22	0,45	0,30	-0,11	F=10.8, df=4 p=.000
uses credible scientific sources <sup>a</sup>	0,20	0,47	0,28	-0,23	0,08	0,37	F=25.7, df=4 p=.000	0,22	0,17	F=1.0, df=1 p=.317	0,55	0,30	-0,20	0,08	0,36	F=13.6, df=4 p=.000	0,36	0,25	-0,26	0,07	0,37	F=12.6, df=4 p=.000
is hostile to science <sup>a</sup>	-0,59	-0,91	-0,67	-0,48	-0,27	-0,67	F=16.6, df=4 p=.000	-0,58	-0,59	F=0.1, df=1 p=.800	-0,92	-0,63	-0,65	-0,19	-0,61	F=10.0, df=4 p=.000	-0,89	-0,72	-0,31	-0,36	-0,73	F=10.2, df=4 p=.000
is sufficiently comprehensive <sup>a</sup>	-0,44	-0,41	-0,28	0,08	-0,71	-0,71	F=31.9, df=4 p=.000	-0,38	-0,50	F=4.8, df=1 p=.029	-0,39	-0,30	0,13	-0,64	-0,61	F=13.2, df=4 p=.000	-0,44	-0,24	0,02	-0,78	-0,79	F=19.4, df=4 p=.000
Index <sup>b</sup>	0,28	1,04	0,89	-0,01	-0,73	0,41	F=20.7, df=4 p=.000	0,37	0,19	F=1.6, df=1 p=.210	1,23	0,85	0,34	-0,82	0,40	F=11.5, df=4 p=.000	0,81	0,95	-0,39	-0,64	0,41	F=10.4, df=4 p=.000
Sample size (n)	1354	193	283	239	281	358		706	648		106	167	124	143	166		87	116	115	138	192	

<sup>a</sup> 5-step rating scale ranging from -2 (strongly disagree) to +2 (strongly agree).

<sup>b</sup> Value range -8 to +8, higher values indicate a more positive evaluation (supporting online text).

**Table S10.** Cross tabulation of "concern about critical peer responses to one's media contacts" and "anticipated peer recognition as perceived benefit of media contacts." (The exact question wording is shown in Table S8.) The percentage figures in the lower right cell of each crosstab represent the groups of respondents anticipating neither positive nor negative responses of peers as important motivators of media contacts; the percentage figures in the upper left cell represent respondents considering both positive effects and critical peer responses as important. The groups of respondents considering a possible positive impact on their reputation among peers and considering critical responses of peers as important, thus, overlap. The concurrence of positive and negative expectations regarding peer response also manifests in the statistical associations (Kendall's tau-b) that are low but all positive. Usually, one would expect negative associations between responses to oppositional statements. We explain the apparent inconsistency by assuming that respondents envisage different situations, groups of peers or kinds of messages when they anticipate the possibility of positive and of critical peer responses in generating answers to our survey question. In the perception of that ambivalent group the effect of scientific norms (for which peer responses serve as indicators) as motivators for media contacts very likely depends on situational factors.

		Total		By country									
				France		Germany		Japan		UK		USA	
		Enhanced reputation <sup>a</sup>		Enhanced reputation <sup>a</sup>		Enhanced reputation <sup>a</sup>		Enhanced reputation <sup>a</sup>		Enhanced reputation <sup>a</sup>		Enhanced reputation <sup>a</sup>	
		Important <sup>c</sup>	Not important <sup>d</sup>	Important <sup>c</sup>	Not important <sup>d</sup>	Important <sup>c</sup>	Not important <sup>d</sup>	Important <sup>c</sup>	Not important <sup>d</sup>	Important <sup>c</sup>	Not important <sup>d</sup>	Important <sup>c</sup>	Not important <sup>d</sup>
Critical reactions <sup>b</sup>	Important <sup>c</sup>	19%	23%	16%	26%	15%	20%	13%	25%	25%	25%	21%	21%
	Not important <sup>d</sup>	20%	38%	17%	41%	20%	45%	18%	44%	20%	30%	24%	34%
Kendall's tau-b <sup>e</sup>		0.14 (p ≤ 0.001)		0.12 (p = 0.085, n.s.)		0.15 (p ≤ 0.01)		0.17 (p ≤ 0.01)		0.13 (p ≤ 0.05)		0.10 (p ≤ 0.05)	
Sample size (n)		1336		192		280		235		280		349	

<sup>a</sup> Item wording: "Enhanced personal reputation among peers"; <sup>b</sup> item wording: "Possible critical reactions from peers".

<sup>c</sup> Response categories "very important" and "somewhat important" collapsed; <sup>d</sup> response categories "not very important" and "not important" collapsed.

<sup>e</sup> Calculated for the uncollapsed (4 x 4) crosstabs.