

References

- Anderson, J. A., Corbett, A. T., Koedinger, K., & Pelletier, R. (1995). Cognitive tutors: Lessons learned. *The Journal of the Learning Sciences, 4*, 167-207.
- Atkins, C. D. (1997). Translating statistics for use in the clinic. *Journal of General Internal Medicine, 12*, 626-628.
- Baines, C. J. (1992). Women and breast cancer: Is it really possible for the public to be well informed? *The Canadian Medical Association Journal, 146*, 2147-2148.
- Banks, S. M., Salovey, P., Greener, S., Rothman, A. J., Moyer, A., Beauvais, J., & Epel, E. (1995). The effects of message framing on mammography utilization. *Health Psychology, 14*, 178-184.
- Bar-Hillel, M. (1980). The base-rate fallacy in probability judgments. *Acta Psychologica, 44*, 211-233.
- Bishop, G. F., Oldendick, R. W., & Tuchfarber, A. J. (1982). Effects of presenting one versus two sides of an issue in survey questions. *Public Opinion Quarterly, 46*, 69-85.
- Black, W. C., Nease, R. F., & Tosteson, A. N. A. (1995). Perceptions of breast cancer risk and screening effectiveness in women younger than 50 years of age. *Journal of the National Cancer Institute, 87*, 720-731.
- Bundesärztekammer (1990). Empfehlungen zur Patientenaufklärung. *Deutsches Ärzteblatt, 87, Heft 16*, 39-41.
- Casscells, W., Schoenberger, A., & Graboys, T. B. (1978). Interpretation by physicians of clinical laboratory results. *The New England Journal of Medicine, 299*, 999-1001.
- Charles, C., Gafni, A., & Whelan, T. (1999). Decision-making in the physician-patient encounter: revisiting the shared treatment decision-making model. *Social Science & Medicine, 49*, 651-661.
- Cockburn, J., Pit, S., & Redman, S. (1999). Perceptions of screening mammography among women aged 40-49. *Australian and New Zealand Journal of Public Health, 23*, 318-321.
- Cockburn, J., Redman, S., Hill, D., & Henry, E. (1995). Public understanding of medical screening. *Journal of Medical Screening, 2*, 224-227.
- Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.

- Cosmides, L., & Tooby, J. (1996). Are humans good intuitive statisticians after all? Rethinking some conclusions from the literature on judgment under uncertainty. *Cognition*, *58*, 1-73.
- Coulter, A. (1997a). Partnerships with patients: the pros and cons of shared clinical decision-making. *Journal of Health Services Research and Policy*, *2*, 112-121.
- Coulter, A. (1997b). Developing evidence-based patient information. In M. Dunning, G. Needham, & S. Weston (Eds.), *But will it work, doctor?* (pp. 30-32). Oxford: The But Will It Work, Doctor? Group.
- Dolan, N. C., Lee, A. M., & McDermott, M. (1997). Age-related differences in breast cancer carcinoma knowledge, beliefs and perceived risk among women visiting an academic general medicine practice. *Cancer*, *80*, 413-420.
- Doyal, L. (2001). Informed consent: moral necessity or illusion? *Quality in Health Care*, *10*(Suppl. I), i29-i33.
- Drossaert, C. H. C., Boer, H., & Seydel, E. R. (1996). Health education to improve repeat participation in the Dutch breast cancer screening program: evaluation of a leaflet tailored to previous participants. *Patient Education and Counseling*, *28*, 121-131.
- Eddy, D. M. (1982). Probabilistic reasoning in clinical medicine: Problems and opportunities. In D. Kahneman, P. Slovic, & A. Tversky (Eds.), *Judgment under uncertainty: Heuristics and biases* (pp. 249-267). Cambridge: Cambridge University Press.
- Edwards, W. (1968). Conservatism in human information processing. In B. Kleinmuntz (Ed.), *Formal representation of human judgment* (pp. 17-52). New York: Wiley.
- Erev, I., & Cohen, B. L. (1990). Verbal versus numerical probabilities: Efficiency, biases and the preference paradox. *Organizational Behavior and Human Decision Processes*, *45*, 1-18.
- Evans, J., Handley, S. J., Perham, N., Over, D. E., & Thompson, V. A. (2000). Frequency versus probability formats in statistical word problems. *Cognition*, *77*, 197-213.
- Fiedler, K. (2000). Beware of samples! A cognitive-ecological sampling approach to judgment bias. *Psychological Review*, *107*, 659-676.
- Fiedler, K., Brinkmann, B., Betsch, T., & Wild, B. (2000). A sampling approach to biases in conditional probability judgments: Beyond base rate neglect and statistical format. *Journal of Experimental Psychology: General*, *129*, 399-418.
- Fischer, K., & Jungermann, H. (1996). Rarely occurring headaches and rarely occurring blindness: Is rarely = rarely? *Journal of Behavioral Decision Making*, *9*, 153-172.

- Fox, C. R., & Irwin, J. R. (1998). The role of context in the communication of uncertain beliefs. *Basic and Applied Social Psychology, 20*, 57-70.
- General Medical Council (1998, November). Seeking patients' consent: the ethical considerations. Retrieved September 17, 2001, from <http://www.gmc-uk.org/standards/consent.htm>
- Gibis, B., Busse, R., Reese, E., Richter, K., Schwartz, F.-W., & Köbberling, J. (1998). *Das Mammographie-Screening zur Brustkrebsfrüherkennung*. Baden-Baden: Nomos.
- Gigerenzer, G. (1998). Ecological intelligence. In D. Cummins & C. Allen (Eds.), *The Evolution of Mind* (pp. 9-29). New York: Oxford University Press.
- Gigerenzer, G. (2002). *Reckoning with Risk: Learning to live with uncertainty*. London: Penguin Books.
- Gigerenzer, G. & Edwards, A. (in press). Simple tools for understanding risks: from innumeracy to insight. *British Medical Journal*.
- Gigerenzer, G., Hertwig, R., van den Broek, E., Fasolo, B., & Katsikopoulos, K. (2003). "A 30% chance of rain tomorrow": How does the public understand probabilistic weather forecasts? Manuscript submitted for publication.
- Gigerenzer, G., & Hoffrage, U. (1995). How to improve Bayesian reasoning without instruction: Frequency formats. *Psychological Review, 102*, 684-704.
- Gigerenzer, G., & Hoffrage, U. (1999). Helping people overcome difficulties in Bayesian reasoning: A reply to Lewis and Keren (1999) and Mellers and McGraw (1999). *Psychological Review, 106*, 425-430.
- Gigerenzer, G., Hoffrage, U., & Ebert, A. (1998). AIDS counseling for low-risk clients. *AIDS Care, 10*, 197-211.
- Gigerenzer, G., Hoffrage, U., & Kleinbölting, H. (1991). Probabilistic mental models: A Brunswikian theory of confidence. *Psychological Review, 98*, 506-528.
- Gillian, D. T., & Schvaneveldt, R. W. (1999). Applying cognitive psychology: Bridging the gulf between basic research and cognitive artifacts. In F. T. Durso, R. S. Nickerson, R. W. Schvaneveldt, S. T. Dumais, D. S. Lindsay, & M. T. H. Chi (Eds.), *Handbook of Applied Cognition* (pp. 3-31). New York: Wiley.
- Giroto, V., & Gonzalez, M. (2001). Solving probabilistic and statistical problems: a matter of information structure and question form. *Cognition, 78*, 247-276.
- Grimes, D. A., & Snively, G. R. (1999). Patients' understanding of medical risks: implications for genetic counseling. *Obstetrics & Gynecology, 93*, 910-914.

- Hahn, A., & Renner, B. (1998). Perception of health risks: How smoker status affects defensive optimism. *Anxiety, Stress, and Coping, 11*, 93-112.
- Hallowell, N., Statham, H., Murton, F., Green, J., & Richards, M. (1997). "Talking about chance": The presentation of risk information during genetic counseling for breast and ovarian cancer. *Journal of Genetic Counseling, 6*, 269-286.
- Hamm, R. (1991). Selection of verbal probabilities: A solution for some problems of verbal probability expression. *Organizational Behavior and Human Decision Processes, 48*, 193-223.
- Hamm, R. M., & Smith, S. L. (1998). The accuracy of patients' judgments of disease probability and test sensitivity and specificity. *The Journal of Family Practice, 47*, 44-52.
- Heilbrun, K., Philipson, J., Berman, L., & Warren, J. (1999). Risk communication: clinicians' reported approaches and perceived values. *Journal of the American Academy of Psychiatry and Law, 27*, 397-406.
- Hertwig, R., & Gigerenzer, G. (1999). The 'conjunction fallacy' revisited: How intelligent inferences look like reasoning errors. *Journal of Behavioral Decision Making, 12*, 275-305.
- Hoffrage, U., & Gigerenzer, G. (1998). Using natural frequencies to improve diagnostic inferences. *Academic Medicine, 73*, 538-540.
- Hoffrage, U., & Gigerenzer, G. (in press). How to improve the diagnostic inferences of medical experts. In E. Kurz & G. Gigerenzer (Eds.), *The expert in modern societies: Historical and contemporary perspectives*. New York: Kluwer Academic/Plenum Publishers.
- Hoffrage, U., Gigerenzer, G., Krauss, S., & Martignon, L. (2002). Representation facilitates reasoning: What natural frequencies are and what they are not. *Cognition, 84*, 343-352.
- Hoffrage, U., Kurzenhäuser, S., & Gigerenzer, G. (2000). Wie kann man die Bedeutung medizinischer Testbefunde besser verstehen und kommunizieren? *Zeitschrift für ärztliche Fortbildung und Qualitätssicherung, 94*, 713-719.
- Hoffrage, U., Lindsey, S., Hertwig, R., & Gigerenzer, G. (2000). Communicating statistical information. *Science, 290*, 2261-2262.
- Hopwood, P. (2000). Breast cancer risk perception: what do we know and understand? *Breast Cancer Research, 2*, 387-391.

- Howe, D. T., Gornall, R., Wellesley, D., Boyle, T., & Barber, J. (2000). Six year survey of screening for Down's syndrome by maternal age and mid-trimester ultrasound scans. *British Medical Journal*, *320*, 606-610.
- Hux, J. E., & Naylor, C. D. (1995). Communicating the benefits of chronic preventive therapy: does the format of efficacy data determine patients' acceptance of treatment? *Medical Decision Making*, *15*, 152-157.
- Johnson-Laird, P. N., Legrenzi, P., Girotto, V., Legrenzi, M. S., & Caverni, J.-P. (1999). Naive probability: A mental model theory of extensional reasoning. *Psychological Review*, *106*, 62-88.
- Kahneman, D., Slovic, P., & Tversky, A. (1982). *Judgment under uncertainty: Heuristics and biases*. Cambridge: Cambridge University Press.
- Karsa, L. v. (1995). Mammographie-Screening. *Zeitschrift für Allgemeinmedizin*, *24*, 1863-1867.
- Karsa, L. v. (1998). Sekundärprävention in der Onkologie: Allgemeine Grundlagen unter besonderer Berücksichtigung des Mammographie-Screenings. *Onkologe*, *4*, 723-730.
- Kerlikowske, K. (2000). Breast Cancer Screening. In M. B. Goldman & M. C. Hatch (Eds.), *Women and Health* (pp. 895-906). New York: Academic Press.
- Kerlikowske, K., Grady, D., Barclay, J., Sickles, E. A., & Ernster, V. (1996). Effect of age, breast density, and family history on the sensitivity of first screening mammography. *Journal of the American Medical Association*, *276*, 33-38.
- Kleiter, G. (1994). Natural sampling: Rationality without base rates. In G. H. Fischer & D. Laming (Eds.), *Contributions to mathematical psychology, psychometrics, and methodology* (pp. 375-388). New York: Springer.
- Koehler, J. J. (1996a). The base rate fallacy reconsidered: Descriptive, normative, and methodological challenges. *Behavioral and Brain Sciences*, *19*, 1-53.
- Koehler, J. J. (1996b). On conveying the probative value of DNA evidence: Frequencies, likelihood ratios, and error rates. *University of Colorado Law Review*, *67*, 859-886.
- Krämer, W. (1991). *So lügt man mit Statistik*. Campus Verlag: Frankfurt/Main.
- Krauss, S., Martignon, L., Hoffrage, U., & Gigerenzer, G. (2002). Bayesian reasoning and natural frequencies: A generalization to complex situations. Manuscript submitted for publication.
- Kühberger, A. (1995). The framing of decisions: A new look at old problems. *Organizational Behavior and Human Decision Processes*, *62*, 230-240.

- Kurzenhäuser, S. (2003). Welche Informationen vermitteln deutsche Gesundheitsbroschüren über die Screening-Mammographie? *Zeitschrift für ärztliche Fortbildung und Qualitätssicherung*, 97, 53-57.
- Kurzenhäuser, S., & Hoffrage, U. (2002). Teaching Bayesian reasoning: An evaluation of a classroom tutorial for medical students. *Medical Teacher*, 24, 531-536.
- Lerman, C., Trock, B., Rimer, B. K., Jepson, C., Brody, D., & Boyce, A. (1991). Psychological side effects of breast cancer screening. *Health Psychology*, 10, 259-267.
- Lewis, C., & Keren, G. (1999). On the difficulties underlying Bayesian reasoning: A comment on Gigerenzer and Hoffrage. *Psychological Review*, 106, 411-416.
- Lloyd, A. J. (2001). The extent of patients' understanding of the risk of treatments. *Quality in Health Care*, 10(Suppl. I), i14-i18.
- Lloyd, A. J., Hayes, P. D., London, N. J. M., Bell, P. R. F., & Naylor, A. R. (1999). Patients' ability to recall risk associated with treatment options. *Lancet*, 353, 645.
- Macchi, L. (2000). Partitive formulation of information in probabilistic problems: Beyond heuristics and frequency format explanations. *Organizational Behavior and Human Decision Processes*, 82, 217-236.
- Macchi, L. & Mosconi, G. (1998). Computational features vs. frequentist phrasing in the base-rate fallacy. *Swiss Journal of Psychology*, 57, 79-85.
- Malenka, D. J., Baron, J. A., Johansen, S., Wahrenberger, J. W., & Ross, J. M. (1993). The framing effect of relative and absolute risk. *Journal of General Internal Medicine*, 8, 543-548.
- Mammographie-Screening Planungsstelle Köln (2001). Informationen zum Mammographie-Screening [Pamphlet].
- Marshall, K. G. (1996). The ethics of informed consent for preventive screening programs. *Canadian Medical Association Journal*, 155, 377-383.
- Marteau, T. M. (1995). Towards informed decisions about prenatal testing: A review. *Prenatal Diagnosis*, 15, 1215-1226.
- Marteau, T. M., Plenicar, M., & Kidd, J. (1993). Obstetricians presenting amniocentesis to pregnant women: practice observed. *Journal of Reproductive and Infant Psychology*, 11, 3-10.
- McQueen, M. J. (2002). Some ethical and design challenges of screening programs and screening tests. *Clinica Chimica Acta*, 315, 41-48.
- Mellers, B., & McGraw, P. (1999). How to improve Bayesian reasoning without instruction: Comment on Gigerenzer and Hoffrage. *Psychological Review*, 106, 417-424.

- Merz, J. F., Druzdzel, M., & Mazur, D. (1991). Verbal expressions of probability in informed consent litigation. *Medical Decision Making, 11*, 273-281.
- Metsch, L. R., McCoy, C. B., McCoy, H. V., Pereyra, M., Trapido, E., & Miles, C. (1998). The role of the physician as an information source of mammography. *Cancer Practice, 6*, 229-236.
- Morrell, R. W., Park, D. C., & Poon, L. W. (1989). Quality of instructions on prescription drug labels: effects on memory and comprehension in young and old adults. *The Gerontologist, 29*, 345-354.
- Mühlhauser, I., & Höldke, B. (1999). Übersicht: Mammographie-Screening – Darstellung der wissenschaftlichen Evidenz-Grundlage zur Kommunikation mit der Frau. *Sonderbeilage arznei-telegramm, 10/99*, 101-108.
- Nakao, M. A., & Axelrod, S. (1983). Numbers are better than words. Verbal specifications of frequency have no place in medicine. *The American Journal of Medicine, 74*, 1061-1065.
- Napoli, M. (1997). What do women want to know? *Journal of the National Cancer Institute Monographs, 22*, 11-13.
- Ollenschläger, G. (2000). Kritische Bewertung von Gesundheitsinformationen für medizinische Laien. In R. Kunz, G. Ollenschläger, H. Raspe, G. Jonitz, & F.-W. Kolkmann, *Lehrbuch Evidenzbasierte Medizin in Klinik und Praxis* (p.177-182). Köln: Deutscher Ärzte-Verlag.
- Olsen, O., & Gøtzsche, P. (2001). Cochrane review on screening for breast cancer with mammography. *Lancet, 358*, 1340-1342.
- Paepke, S., Schubert, R., Hüttner, Ch., Blohmer, J. U., & Lichtenegger, W. (2000). Informiertheit und Brustkrebsvorsorgeverhalten der weiblichen Bevölkerung in Berlin und Hildesheim – Ergebnisse einer Querschnittsuntersuchung von 2110 Frauen. *Geburtshilfe und Frauenheilkunde, 60*, 620-624.
- Paepke, S., Schwarz-Boeger, U., von Minckwitz, G., Kaufmann, M., Schultz-Zehden, B., Beck, H., et al. (2001). Brustkrebsfrüherkennung – Kenntnisstand und Akzeptanz in der weiblichen Bevölkerung. *Deutsches Ärzteblatt, 98*, 2178–2186.
- Phillips, K. A., Glendon, G., & Knight, J. A. (1999). Putting the risk of breast cancer in perspective. *New England Journal of Medicine, 340*, 141–144.
- Reschke, K. (1990). Gestaltung gesundheitsrelevanter Informationen. In R. Schwarzer (Ed.), *Gesundheitspsychologie. Ein Lehrbuch* (p. 461-474). Göttingen: Hogrefe.

- Sarfati, D., Howden-Chapman, P., Woodward, A., & Salmond, C. (1998). Does the frame affect the picture? A study into how attitudes to screening for cancer are affected by the way benefits are expressed. *Journal of Medical Screening*, *9*, 137-140.
- Scaf-Klomp, W., Sandermann, R., van de Weil, H. B. M., Otter, R., & van den Heuvel, W. J. A. (1997). Distressed or relieved? Psychological side effects of breast cancer screening in the Netherlands. *Journal of Epidemiology and Community Health*, *51*, 705-710.
- Schriver, K. A. (1997). *Dynamics in document design*. New York: John Wiley & Sons, Inc.
- Schwartz, L. M., Woloshin, S., Black, W. C., & Welch, G. (1997). The role of numeracy in understanding the benefit of screening mammography. *Annals of Internal Medicine*, *127*, 966-972.
- Schwartz, L. M., Woloshin, S., Sox, H. C., Fischhoff, B., & Welch, G. (2000). US women's attitudes to false positive mammography results and detection of ductal carcinoma in situ: cross sectional survey. *British Medical Journal*, *320*, 1636-1640.
- Schwarzer, R. (1992). Self-efficacy in the adoption and maintenance of health behaviors: theoretical approaches and a new model. In R. Schwarzer (Ed.), *Self-efficacy. Thought control of action*. (pp. 217-243). Washington DC: Hemisphere.
- Schwarzer, R., & Gutiérrez-Doña, B. (2000). Health Psychology. In K. Pawlik & M. R. Rosenzweig (Eds.), *International Handbook of Psychology* (pp. 452-465). London: Sage Publications Ltd.
- Secker, J., & Pollard, R. (1995). *Writing leaflets for patients. Guidelines for producing written information*. Edinburgh: Health Education Board for Scotland.
- Sedlmeier, P. (1997). BasicBayes: A tutor system for simple Bayesian inference. *Behavior Research Methods, Instruments, & Computers*, *29*, 328-336.
- Sedlmeier, P. (1999). *Improving statistical reasoning: Theoretical models and practical implications*. Mahwah: Lawrence Erlbaum Associates.
- Sedlmeier, P., & Gigerenzer, G. (2001). Teaching Bayesian reasoning in less than two hours. *Journal of Experimental Psychology: General*, *130*, 380-400.
- Slaytor, E. K., & Ward, J. E. (1998). How risks of breast cancer and benefits of screening are communicated to women – analysis of 58 pamphlets. *British Medical Journal*, *317*, 263–264.
- Slovic, P., Monahan, J., & MacGregor, D. G. (2000). Violence risk assessment and risk communication: The effects of using actual cases, providing instruction, and

- employing probability versus frequency formats. *Law and Human Behavior*, 24, 271-296.
- Snijders, R. J. M., Noble, P., Sebire, N., Souaka, A., & Nicolaides, K. H., for the Fetal Medicine Foundation First Trimester Screening Group (1998). UK multicentre project on assessment of risk of trisomy 21 by maternal age and fetal nuchal-translucency thickness at 10-14 weeks of gestation. *The Lancet*, 352, 343-346.
- Steckelberg, A., Balgenorth, A., & Mühlhauser, I. (2001) Analyse von Verbraucher- Informationsbroschüren in Deutschland zum Screening auf kolorektales Karzinom. *Zeitschrift für ärztliche Fortbildung und Qualitätssicherung*, 103, 535-538.
- Stigler, S. M. (1983). Who discovered Bayes's theorem? *American Statistician*, 37, 290-296.
- Ubel, P. A., & Loewenstein, G. (1997). The role of decision analysis in informed consent: choosing between intuition and systematicity. *Social Science & Medicine*, 44, 647-656.
- Weinstein, N. D. (1999). What does it mean to understand a risk? Evaluating risk comprehension. *Journal of the National Cancer Institute Monographs*, 25, 15-20
- Woloshin, S., Schwartz, L. M., Byram, S. J., Sox, H. C., Fischhoff, B., & Welch, G. (2000). Women's understanding of the mammography screening debate. *Archives of Internal Medicine*, 160, 1434-1440.
- Wright, P. (1994). Quality or usability? Quality writing provokes quality reading. In M. Steehouder, C. Jansen, P. van der Poort, & R. Verheijen (Eds), *Quality of Technical Documentation* (pp. 7-38). Amsterdam: Rodopi.
- Wright, P. (1999a). Designing healthcare advice for the public. In F. T. Durso, R. S. Nickerson, R. W. Schvaneveldt, S. T. Dumais, D. S. Lindsay, & M. T. H. Chi (Eds.), *Handbook of Applied Cognition* (pp. 695-723). New York: Wiley.
- Wright, P. (1999b). Writing and information design of healthcare materials. In C. N. Candlin & K. Hyland (Eds.), *Writing: Texts, Processes and Practices* (pp. 85-98). London: Longman.
- Yamagishi, K. (1997). When a 12.86% Mortality is More Dangerous than 24.14%: Implications for Risk Communication. *Applied Cognitive Psychology*, 11, 495-506.