In 1989, after reviewing that report, Koop concluded the available research was inadequate for drawing definitive conclusions. That his nonconclusion continues to be distorted by ideologues into evidence that abortion has no psychological risks is a sign of desperation.[3]

We welcome critical analyses. The claim that abortion is beneficial to women should be reviewed similarly. Even-handed critics will quickly discover that the assumed benefits of abortion rest solely on anecdotal evidence. There are no studies documenting significant, statistically measurable benefits. Even smoking was once thought to have health benefits.[7]

Major and Gail Erlick Robinson explain our results with the hypothesis that mentally disturbed women are more likely to choose abortion. If true, this argument merely strengthens our conclusion that a history of abortion is a marker for mental illness.

Major's own research team has concluded that abortion can be the direct cause of post-traumatic stress disorder.[8] Three of my coauthors (Vincent Rue, Martha Shuping and Philip Ney) regularly treat women suffering from abortion-related psychiatric illnesses.

More research is clearly needed. Publication should not hinge on political litmus tests.

David C. Reardon
Elliot Institute
Springfield, Ill.

References
1. Reardon DC, Cougle JR, Rue VM, Shuping MW, Coleman PK, Ney PG. Psychiatric admissions of low-income women following abortion and childbirth. *CMAJ* 2003;168(10):1253-6.
2. Major B. Psychological implications of abortion — highly charged and rife with misleading research [editorial]. *CMAJ* 2003;168(10):1257-8.
3. Burke T, Reardon DC. *Forbidden grief: the unspoken pain of abortion*. Springfield (IL): Acorn Books; 2002.
4. Stephen's guide to the logical fallacy [web site]. Available: www.datanation.com/fallacies/index.htm (accessed 2003 June 23).
5. David H, Rasmussen N, Holst E. Post-abortion and postpartum psychotic reactions. *Fam Plann Perspect* 1981;13(1):32-4.
6. Adler NE, David HP, Major BN, Roth SH, Russo NF, Wyatt GE. Psychological responses after abortion. *Science* 1990; 248:41-4.
7. Mahaney FX Jr. Oldtime ads tout health benefits of smoking: tobacco industry had doctors' help. *J Natl Cancer Inst* 1994;86(14):1048-9.
8. Major B, Cozzarelli C, Cooper ML, Zubek J, Richards C, Wilhite M, et al. Psychological responses of women after first-trimester abortion. *Arch Gen Psychiatry* 2000;57(8):777-84.

[The author of the commentary responds:]

As Stephen Genuis observes, "it is sometimes difficult to objectively determine what is factual and credible scientific information and what represents sexual and philosophical ideology." Researcher bias clearly can affect the research process. Nowhere is this more obvious than in research on abortion. David Reardon has quite explicitly stated his intentions to use data such as those he reported in *CMAJ*[1] to affect abortion-related legislation, bring litigation against physicians who perform abortions and reduce women's access to abortion.[2]

It is an error, however, to assume that because researcher neutrality is difficult to achieve, what passes for "evidence" on both sides of politically charged issues is likely to be equally valid and deserving of equal airing. Not all research is biased. It is possible to distinguish good science from bad. Good science is based on established scientific methods, eliminates confounders and uses appropriate control or comparison groups. The study by Reardon and his associates[1] is not good science.[3] It inappropriately used women who carried a (likely wanted, planned) pregnancy to term as a comparison group for women who aborted a (likely unwanted, unplanned) pregnancy. More appropriate comparison groups include women who carried a pregnancy to term and gave the child up for adoption, and women who wanted an abortion but who were denied one or did not obtain one because of external pressures or guilt, as Aaron Keshen points out in his letter.

Reardon and associates also failed to control adequately for demographic, social and psychological differences that likely existed at the time of the pregnancy between women who subsequently aborted versus those who carried their pregnancies to term. The inference that the abortion procedure itself caused postpregnancy differences observed between these 2 groups is faulty scientific reasoning and misleading. The studies referred to by Annie Banno, all of which were conducted by Reardon, are plagued by similar methodological problems.

Brenda Major
Department of Psychology
University of Santa Barbara
Santa Barbara, Calif.

References
1. Reardon DC, Cougle JR, Rue VM, Shuping MW, Coleman PK, Ney PG. Psychiatric admissions of low-income women following abortion and childbirth. *CMAJ* 2003;168(10):1253-6.
2. Reardon, DC. *Making abortion rare*. Springfield (IL): Acorn Books; 1996.
3. Major B. Psychological implications of abortion — highly charged and rife with misleading research [editorial]. *CMAJ* 2003;168(10):1257-8.

[The editors respond:]

The editors of *CMAJ* respond in this issue's editorial (page 93).

Adverse events with Zyban (buproprion)

Barbara Mintzes and associates[1] expressed concern last year over differences between countries in physicians' reporting of adverse reactions to prescription drugs. To illustrate, they cited significant differences in the reported rates of adverse reactions and deaths attributed to Zyban (buproprion) in Canada and the United Kingdom. We have data suggesting that the actual rates of adverse reactions related to the use of Zyban for smoking cessation in community clinical practice may exceed rates reported elsewhere.

Zyban has been commercially available for smoking cessation since 1998. Most of the evidence pertaining to efficacy and rates of adverse reactions stems from 2 large trials,[2,3] both funded by GlaxoSmithKline, the maker of Zyban. These studies showed a relatively low rate of adverse reactions and claimed that only 6% to 8%[2] and 11.9%[3] of patients discontinued the drug because of