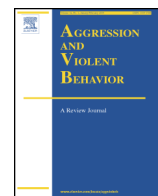




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Aggression and Violent Behavior



Editorial

Special issue on systematic reviews in criminology

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ABSTRACT

This article introduces the special issue on systematic reviews in criminology. It explains what a systematic review is, and how it is superior to the more usual narrative reviews. It also defines a meta-analysis. This article then summarizes the eight systematic reviews and two reviews of systematic reviews that are published in this special issue, advancing knowledge about epidemiology, risk factors, and the effectiveness of interventions for offending and violence.

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1. Narrative reviews in criminology

Criminologists have been publishing literature reviews for many years, on topics such as the epidemiology of offending (e.g., prevalence, frequency, ages of onset and desistance), the development of offending (e.g., important risk factors at different ages), and the effectiveness of interventions to reduce offending. It is better to review the literature than to draw conclusions from personal experience, from anecdotal evidence, from widespread beliefs, or from a single study that was well-funded or heavily publicized. Although the methods have varied, reviewers have followed the same general set of tasks: identify and gather relevant reports, assess them, and reach a summary conclusion.

Beginning in the 1970s, the traditional methods used in these reviews began to be seriously criticized, especially in drawing conclusions about the effectiveness of interventions. One criticism focussed on the general lack of explicitness of reviews, because most of them suffered from a lack of detail about how the reviewer conducted the research. Information was often missing about why certain studies were included while others were excluded from the review. The report of the review often did not describe precisely what literature searches were carried out in order to locate relevant studies, and it was often difficult for the serious reader to determine how the reviewers came to their conclusions. Too often, the reader was forced to accept and trust the reviewer's expertise and was not given sufficient information that would permit the replication of the reviewer's methods.

Another criticism focussed on the methods used. Most of the reviewers did not attempt to control for problems that could potentially bias their review toward one conclusion rather than another. At its worst, a reviewer advocating a particular conclusion could selectively include only studies favoring that conclusion. For example,

contradictory studies could be excluded on the basis that their methods were flawed, whereas favorable studies could be accepted less critically.

Reviewers often failed to deal with potential biases that could cast doubt on the results of a review. For example, many reviewers relied on easy-to-obtain journal articles as the only source for reports. One advantage of journal articles over some other works is that they have usually passed a rigorous peer review process. However, research suggests that relying on journal articles could bias the results toward concluding that interventions to reduce offending are more effective than they really are. This is because researchers are more likely to submit their articles to journals when they find a desirable effect of an intervention and more likely to bury the manuscript in their file drawer when they do not. Both authors and journal editors are biased against articles reporting a null effect, sometimes falsely assuming that such articles do not contribute to knowledge.

Another criticism is that inexplicit and unsystematic review methods cannot cope with the incredible increase in research worldwide. For example, the number of journals that now publish materials relevant to criminology is enormous compared to just a few years ago. The internet now makes thousands of evaluation reports readily accessible to prospective reviewers. In the same way that it would be difficult to make sense of a large, growing, and scattered collection of police reports or prison folders without orderly methods, it is also difficult to make sense of the burgeoning and scattered number of relevant criminological studies without some systematic method of doing so.

2. Systematic reviews

In response to these criticisms, researchers began to develop and refine scientific and orderly methods for conducting reviews, and the concept of a "systematic review" developed in the area of evaluation research. Individuals who are conducting systematic reviews use rigorous methods for locating, appraising, and synthesizing evidence from

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prior evaluation studies. Systematic reviews contain a methods and results section, and are reported with the same level of detail that characterizes high quality reports of original research. It is useful to summarize and provide further details about the features of systematic reviews:

- a) *Explicit objectives.* The rationale for conducting the review is made clear.
- b) *Explicit eligibility criteria.* The reviewers specify in detail why they included certain studies and excluded others. What was the minimum level of methodological quality? Did they consider only a particular type of evaluation design such as randomized experiments? Did the studies have to include a certain type of participant such as children or adults? What types of interventions were included? What kinds of outcome data had to be reported in the studies? All criteria or rules used in selecting eligible studies should be explicitly stated in the final report.
- c) *The search for studies is designed to reduce potential bias.* There are many potential ways in which bias can challenge the results of a review. The reviewers must explicitly state how they conducted their search of potential studies to reduce such bias. How did they try to locate studies reported outside scientific journals? How did they try to locate studies in foreign languages? All bibliographic data bases that were searched should be made explicit so that potential gaps in coverage can be identified.
- d) *Each study is screened according to consistent eligibility criteria, with exclusions justified.* The searches will undoubtedly locate many citations and abstracts to potentially relevant studies. Each of the reports of these potentially relevant studies should be screened to determine if it meets the eligibility criteria for the review. A full listing of all excluded studies and the justifications for exclusion should be available to readers.
- e) *Assembly of the most complete data possible.* The systematic reviewer will generally try to obtain all relevant evaluations that meet the eligibility criteria. In addition, all data that is relevant to the objectives of the review should be carefully extracted from each eligible report and coded and computerized. Sometimes, original study documents lack important information. Where possible, the systematic reviewer should attempt to obtain this information from the authors of the original report.
- f) *Quantitative techniques are used, when appropriate and possible, in analyzing results.* Although there is still some confusion about the meaning of these terms, it is useful to distinguish between a systematic review and a meta-analysis. A meta-analysis involves the statistical or quantitative analysis of the results of research studies. Since it involves the statistical summary of data (e.g. effect sizes), it requires a reasonable number of intervention studies that are sufficiently similar to be grouped together. A meta-analysis typically reports a weighted mean effect size, its variance, and moderators that are related to the effect size. A systematic review may or may not include a meta-analysis. For example, a reviewer may only find a few studies meeting the eligibility criteria. Those studies may differ just enough in the way they were conducted (in interventions, participants, etc.) to make a formal meta-analysis inappropriate and potentially misleading. An important criticism of meta-analysis is that researchers combine “apples and oranges” in order to produce summary statistics. Nevertheless, quantitative methods can be very important in helping the reviewer to determine the average effect of a particular intervention.
- g) *Structured and detailed report.* The final report of a systematic review is structured and detailed so that the reader can understand each phase of the research, the decisions that were made, and the conclusions that were reached. The report should permit other researchers to replicate the methods.

Systematic reviews developed enormously after the establishment of the Cochrane Collaboration in 1993 (www.cochrane.org) to

encourage and fund systematic reviews of health care interventions. The success of the Cochrane Collaboration stimulated international interest in establishing a similar infrastructure for fostering systematic reviews of research on the effects of social, educational, and criminological interventions. The Campbell Collaboration was then established in 2000 to conduct these reviews, and David P. Farrington was elected as the founding Chair of the Campbell Collaboration Crime and Justice Group (see [Farrington, Weisburd, & Gill, 2011](#)). This Group has now published over 40 systematic reviews of the effectiveness of criminological interventions, on the Campbell Collaboration website (www.campbellcollaboration.org), that are freely available to be downloaded by researchers. As in the Cochrane Collaboration, all reviews undergo a rigorous editorial review process to ensure that they meet the highest possible standards of methodological quality (see e.g., [Farrington, 2003](#)).

Most systematic reviews and meta-analyses in criminology have aimed to review the effectiveness of interventions. A recent book edited by [Weisburd, Farrington, and Gill \(2016\)](#) assessed systematic reviews of a variety of types of interventions, including developmental prevention, situational prevention, community interventions, policing, sentencing, correctional programs, and drug interventions. This special issue includes systematic reviews of the effectiveness of interventions, but it also – unusually – includes systematic reviews focusing on epidemiology and risk factors in criminology.

3. This special issue

The special issue begins with a systematic review of the epidemiology of life-course-persistent, adolescence-limited, and late-onset offenders. [Jolliffe, Farrington, Piquero, MacLeod, and van de Weijer \(2017\)](#) reviewed 55 prospective longitudinal studies of offending, but only 14 had published information on the prevalence of the different types of offenders, and their results varied considerably because of the different definitions of offender types that were used. It was possible to apply consistent definitions in analyzing a further seven longitudinal studies. The most surprising result was that the average ages of onset for life-course-persistent and adolescence-limited offenders were quite similar. The researchers were also surprised that there had been few efforts to study life-course-persistent offenders defined according to criminal career duration, and they recommended that more studies of this kind were needed.

In the second article, [Jolliffe, Farrington, Piquero, Loeber, and Hill \(2017\)](#) reviewed the same 55 prospective longitudinal studies to investigate what is known about early risk factors for life-course-persistent, adolescence-limited, and late-onset offenders. They found that only seven of these longitudinal studies had information about early risk factors for these offending types, and there was little consistent evidence that specific risk factors predicted specific offending types. However, life-course-persistent offenders tended to have more risk factors, and the magnitude of these was somewhat greater than for adolescence-limited offenders, who in turn tended to have more risk factors (and of a greater magnitude) than late-onset offenders. The researchers concluded that these types of offenders differed more in degree (the number of risk factors) than in kind (the specific types of risk factors).

[Farrington, Gaffney, and Ttofi \(2017\)](#) aimed to carry out a review of systematic reviews of explanatory risk factors for violence, offending, and delinquency. Explanatory risk factors were defined as those that are clearly measuring an underlying construct that is different from antisocial behavior. Based on searches for articles published between 2000 and 2016, 42 systematic reviews were found, and 20 of these included a meta-analysis. These meta-analyses identified numerous risk factors that were significantly related to crime, violence, delinquency, sex offending, or dating and partner violence. The researchers concluded that more systematic reviews and meta-analyses of risk factors are needed, especially based on prospective longitudinal studies, in order to draw conclusions about possible causal factors.

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