

RESEARCH ARTICLE

CRIME PREVENTION AND REHABILITATION

What Works in Crime Prevention and Rehabilitation
An Assessment of Systematic Reviews

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Research Summary

Just four decades ago, the predominant narrative in crime prevention and rehabilitation was that nothing works. Since that time, criminologists have accumulated a wide body of evidence about programs and practices in systematic reviews. In this article, we summarize what is known in seven broad criminal justice areas by drawing on 118 systematic reviews. Although not everything works, through our “review of reviews,” we provide persuasive evidence of the effectiveness of programs, policies, and practices across a variety of intervention areas.

Policy Implications

It is time to abandon the idea that “nothing works,” not only in corrections but also in developmental, community, and situational prevention; sentencing; policing; and drug treatment. Nevertheless, key gaps remain in our knowledge base. The results of systematic reviews should provide more specific guidance to practitioners. In many areas few randomized evaluations have been conducted. Finally, researchers, through their studies and systematic reviews, must pay more attention to cost–benefit analysis, qualitative research, and descriptive validity.

Keywords

crime prevention, rehabilitation, systematic reviews, meta-analysis, program evaluation

In 1974, Robert Martinson published an article in *The Public Interest* that was to shatter the assumptions of correctional rehabilitation scholars. Martinson, who had just completed a review of evidence of the effectiveness of correctional intervention programs with his colleagues Douglas Lipton and Judith Wilks, laid out in simple terms what he viewed as the overall conclusions of this work: “With few and isolated exceptions, the rehabilitative efforts that have been reported so far have had no appreciable effect on recidivism” (Martinson, 1974: 25). The title of the article was composed as a question: “What Works?—Questions and Answers About Prison Reform.”

Martinson (1974) crafted his paper by using an approach that first stated what we had assumed about correctional rehabilitation programs. For example:

Isn't it true that a correctional facility running a truly rehabilitative program—one that prepares inmates for a life on the outside through education and vocational training— will turn out more successful individuals than will a prison which merely leaves its inmates to rot?
(Martinson 1974: 4)

But when we speak of a rehabilitative prison, aren't we referring to more than education and skill development alone? Isn't what's needed some way of counseling inmates, or helping them with deeper problems that have caused their maladjustment? (Martinson 1974: 29)

All of this seems to suggest that there's not much we know how to do to rehabilitate an offender when he's in an institution. Doesn't this lead to the

clear possibility that the way to rehabilitate offenders is to deal with them outside an institutional setting? (Martinson 1974: 38)

His answer to each of these and other similarly phrased questions was that we have little evidence that supports such programs, which led him to ask rhetorically:

Do all of these studies lead us irrevocably to the conclusion that nothing works, that we haven't the faintest clue about how to rehabilitate offenders and reduce recidivism? (Martinson 1974: 48)

Even though he never said "nothing works," his paper led inevitably to that conclusion, setting off a storm of controversy and criticism regarding rehabilitation and prevention programs.

Why did Martinson's (1974) work have such an impact? It is simply one paper in a public policy journal. A key reason for the paper's influence was the systematic nature of the report on which it was based. In 1975, Lipton, Martinson, and Wilks provided one of the first systematic reviews of evidence in criminology by examining not only the results of studies but also the nature of the methods used and the specific components of the interventions examined. Their findings in the report are persuasive, even when reading it four decades later. But the influence of Martinson's work was not simply a function of the quality of the report on which it is based. It was also fueled by the reaction of the agency that sponsored it, the New York State Governor's Special Committee on Criminal Offenders. After receiving the final report in 1972, the committee refused to publish it, which led to the report gaining a powerful underground reputation.

When it was finally published after a court case on prison conditions led to its release, it quickly became one of the most cited publications on crime.

Moreover, Martinson's (1974) conclusions were to be reinforced by a National Academy of Sciences panel on correctional interventions in 1979 (Sechrest, White, and Brown, 1979). Importantly, similar conclusions were being reached in other countries (e.g., Brody, 1976) and other fields. For example, in the area of delinquency prevention, a report by Berleman (1980), funded by the U.S. Office of Juvenile Justice and Delinquency Prevention (OJJDP), was highly influential. Berleman claimed to have reviewed all methodologically adequate delinquency prevention studies that had been conducted up to that time, which involved comparisons between experimental and control conditions, and he concluded that these interventions were generally ineffective in preventing delinquency.

In some cases, the evidence was cumulative across studies rather than drawn from a single review (see, e.g., Weisburd and Braga, 2006). For example, the findings from evaluations of such key police prevention approaches as generalized preventive patrol and rapid response to citizen calls for service revealed that such programs did little to reduce crime (Kelling, Pate, Dieckman, and Brown, 1974; Spelman and Brown, 1984). Indeed, by the 1990s, David Bayley (1994: 3) could argue with confidence that "[t]he police do not prevent crime. This is one of the best-kept secrets of modern life. Experts know it, the police know it, but the public does not know it. Yet the police pretend that they are society's best defense against crime. . . . This is a myth."

Although the assumption that nothing works was to gain wide acceptance among criminologists, scholars began almost from the outset to question the broad scope of conclusions that Martinson (1974) and others had reached. Palmer (1975), for example,

argued that Martinson had overlooked many positive findings in his review to come to a strong general statement about the ineffectiveness of correctional programs (see Lipton et al., 1975; see also Thornton, 1987). Sherman and Weisburd (1995) took a similar view of the nothing works philosophy in policing, noting that despite studies such as the Kansas City Preventive Patrol Experiment, the 1970s produced isolated examples of successful policing initiatives.

It was clear that many crime prevention and rehabilitation efforts did not work. But the conclusion that nothing worked was in some ways as naïve as the assumptions prevalent before the 1970s, a period in which an unjustified exuberance about crime prevention efforts was common (Visher and Weisburd, 1997). Lipsey (1992) suggested that the debate over the effectiveness of treatment programs was fueled in part by the nature of the distribution of research results. By using the example of juvenile interventions, he illustrated a wide diversity of program effects. Added together, they resulted in a finding of no difference. But taken study by study, they showed that some programs have large and significant impacts, whereas others do not. Similarly, Farrington, Ohlin, and Wilson (1986: 9), while acknowledging the many negative research findings, concluded from the results of a review of randomized experiments that they “do not show that ‘nothing works.’”

Martinson (1976) himself seems to have drawn a different conclusion regarding the ability of society to do something about crime in a response to a critique of his 1974 article. He did not conclude that criminologists and policy makers should throw up their hands and close shop. Rather, he argued that we have to pull up our shirtsleeves and get to work on developing smarter crime prevention policies. Martinson (1976: 181) wrote:

The aim of future research will be to create the knowledge needed to reduce crime. It must combine the analytical skills of the economist, the jurisprudence of the lawyer, the sociology of the life span, and the analysis of systems. Traditional evaluation will play a modest but declining role.

Martinson (1976) certainly was correct in his expectation that economists would begin to play a more important role in criminology and crime policy (see, e.g., Bushway, 1998, 2004; Cook, 1980, 1986; Levitt, 1996, 2004). It is also the case that criminologists have taken advantage of basic theory and systems research to understand crime across the life course (Piquero, Farrington, and Blumstein, 2003; Sampson and Laub, 1992). Nevertheless, Martinson (1976) did not recognize that traditional evaluation, as he defined it, could become a key part of this new knowledge base that would inform crime policy. He essentially dismissed the potential of focused evaluation research to provide important knowledge about crime control.¹

During the last two decades, many evaluation studies have been conducted that challenge these overarching conclusions in a series of substantive areas in criminology (Cullen, 2005; Lipsey, Chapman, and Landenberger, 2001; Lipsey and Cullen, 2007; MacKenzie and Farrington, 2015; Sherman, Farrington, Welsh, and MacKenzie, 2006; Visher and Weisburd, 1997; Weisburd and Eck, 2004; Welsh and Farrington, 2006). In

¹ Shortly before his death Martinson (1979: 243) concluded, based on an ongoing study he was conducting for the National Institute of Law Enforcement and Criminal Justice, that “contrary to my previous position, some treatment programs *do* have an appreciable effect on recidivism” (Martinson 1979: 243). Importantly however, he argued that his previous conclusion was based on the “misleading” approach of using evaluation studies as a basis for his assessment: “Studies [in his new review] were sent to us from all regions of the United States, from all but five states, and reflect the work of all departments of research, not merely the experimental (evaluation) research to which our previous book was limited. Indeed, it was misleading to judge criminal justice on the basis of these evaluation studies” (1979: note 6, p. 244).

some of the existing reviews, researchers took a broad approach, analyzing findings across a series of substantive areas (e.g., see Sherman et al., 2006). These researchers took advantage of the growth of what have been termed “systematic reviews” of research evidence (e.g., see Lipsey and Cullen, 2007). Systematic reviews are reviews that comprise rigorous methods for locating, appraising, and synthesizing evidence from prior evaluation studies (see Farrington and Petrosino, 2000; Farrington, Weisburd, and Gill, 2011; Littell, Corcoran, and Pillai, 2008). But to date, a broadly based review of what works in crime prevention and rehabilitation based on systematic reviews has not been carried out. Our article is drawn from a review of systematic reviews in seven areas of crime prevention (developmental and social prevention, community interventions, situational prevention, policing, sentencing/deterrence policies, correctional programs, and drug treatment) carried out by a large team of researchers (see Weisburd, Farrington and Gill, 2016). We provide the broadest and most comprehensive review of what works in crime prevention and rehabilitation that has been conducted to date.

In this article, we begin with the following question: Do the findings from a review of systematic reviews change our overall understanding of what works? Systematic reviews of research evidence are characterized by careful searches of the research literature, including both published and unpublished studies, and researchers often try to draw general conclusions from work based on meta-analytic statistics (Lipsey and Wilson, 2001; Petrosino, Boruch, Farrington, Sherman, and Weisburd, 2003). By examining this rigorous research evidence across the seven areas of crime prevention and rehabilitation reviewed, we can draw unambiguous conclusions. There is strong evidence of the crime prevention effectiveness of programs, policies, and practices across a wide

variety of criminal justice interventions. It is time to abandon the nothing works idea not only in corrections but also in policing, community interventions, and a broad array of areas in crime and justice. The findings from the reviews also reveal that not everything works, and that criminologists, practitioners, and policy makers must carefully survey the evidence to identify effective programs.

After synthesizing the evidence gained from our review, we turn to key gaps in the existing knowledge base. As we will illustrate, researchers conducting systematic reviews in crime and justice seldom get “into the weeds.” They show that crime prevention programs generally work, but they do not provide the kind of everyday guidance to practitioners and policy makers that an evidence base must produce to become useful to practice. Finally, we argue that more emphasis needs to be placed on qualitative data and cost–benefit analysis as we advance evidence-based policies.

What Have We Learned From an Assessment of Systematic Reviews?

We set out to assess systematic reviews of research evidence in seven broad areas:

Developmental and Social Prevention: These programs are defined as community-based interventions intended to prevent antisocial behavior, targeted on children and adolescents up to 18 years of age, and aiming to change individual, family, or school risk factors. These programs can be distinguished from situational or physical prevention programs and from criminal justice prevention based on deterrence, rehabilitation, or incapacitation.

Community Interventions: Community-based crime prevention in our review embraces several diverse strategies, from civic engagement and empowerment in response to crime and disorder issues at the neighborhood level, to interventions for at-risk youth and community correctional and reentry services for adjudicated offenders.

Situational Prevention: Situational prevention focuses on the crime event and how the immediate environment within which offenders may find themselves affects the probability of crime occurrence (e.g., Clarke, 1995). The situational crime prevention strategies examined involve the alleviation of vulnerabilities in the built environment or manufactured products, or ways of changing the behavior of potential offenders, victims, and guardians, so as to reduce the likelihood of crime occurrence.

Policing: We focused on police programs, training, interventions, or activities that sought to impact on crime and other policing outcomes. We included only those reviews that featured exclusively or primarily studies where the police played a significant role in the intervention under review.

Sentencing/Deterrence: For the purpose of this review, the term *sentencing* was defined as “any sanction imposed by a judge via legal proceedings.” The review also included programs that were based on deterrence mechanisms applied to potential offenders in criminal justice settings (e.g., Scared Straight).

Correctional Interventions: We focus on programs for general offenders provided within an adult correctional setting. Six types of programs were reviewed: (1) educational, vocational, or work related; (2) religious; (3) substance abuse; (4)

psychosocial or behavioral (e.g., cognitive-behavioral); (5) sex offender; and (6) mental illness.

Drug Treatment and Interventions: We review systematic reviews aimed across a broad range of drug interventions and a broad array of crime-related outcome measures. These include criminal justice interventions (e.g., drug testing, boot camps, and drug rehabilitation programs) as well as traditional prescribing and treatment methods (e.g., rapid detoxification, maintenance prescribing, prescription of opioid receptor antagonists, and psycho-social treatment programs).

The areas were chosen in large part because we believed that they covered most of the known territory of systematic reviews in crime and justice. Expert scholars in the specific areas identified systematic reviews and summarized their effects (see Weisburd, Farrington, and Gill, 2016). We developed a series of guidelines at the outset for each of the review teams:

1. The review of systematic reviews should include a systematic search and specific inclusion/exclusion criteria. (See Weisburd et al. [2016] for the specific search terms and approaches used in each area.)
2. Although the reviews included are not restricted to Campbell Collaboration reviews, the standard for inclusion of a review should follow those used by the Campbell Collaboration Crime and Justice Group.²

² campbellcollaboration.org/what_is_a_systematic_review/index.php.

3. Where an earlier systematic review (SR) of a particular topic is updated, the earlier SR should be excluded and included in the list of excluded reviews.
4. It was not necessary for every SR to include a meta-analysis.
5. Effect sizes for each review should be converted into odds ratios to allow for comparison across review areas.
7. A minimum of two studies is required for inclusion of a review.
8. There should be no attempt to calculate weighted mean effect sizes of systematic reviews because of their non-independence (i.e., different systematic reviews may include the same studies).

The teams met together at The Hebrew University in Jerusalem at a meeting sponsored by the Academic Study Group, The Hebrew University, and the Center for Evidence Based Crime Policy at George Mason University. This meeting allowed the teams to identify areas of consistency and the general direction of the overall project. The individual reports including details of systematic searches, studies, and findings are published in a recent book (Weisburd et al., 2016).

It is important to note at the outset that we did not carry out statistical meta-analyses by summarizing the systematic reviews in each area or by combining the areas (see guideline 8). We discovered early on in the process that individual studies could be included in multiple reviews within an area of prevention. For example, in the policing review by Telep and Weisburd (2016), they identified 337 publications in the 17 reviews examined. Some of these publications are repeats as a single study may appear in multiple reviews (e.g., Weisburd and Green [1995] appears in the hot-spots review, the

problem-oriented policing review, the drug law enforcement review, and the micro displacement review). By removing overlapping publications, Telep and Weisburd found that 285 unique papers were covered in the completed reviews. Because individual studies were included across multiple reviews, it would have been inappropriate to summarize the reviews by using meta-analytic techniques, which require independence across “studies” that are summarized (Lipsey and Wilson, 2001).

In Table 1, we list the number of systematic reviews identified in each area and the number of primary studies included in each systematic review. Overall, the review of reviews included 118 distinct systematic reviews. The largest number of reviews was found in the area of developmental prevention ($N = 33$) and the smallest for situational prevention ($N = 7$). We present a narrative summary of the overall findings of each review and then a quantitative description of the systematic reviews.

*** TABLE 1 ABOUT HERE ***

Developmental and Social Prevention

Farrington, Ttofi, and Lösel (2016) examined developmental and social prevention. Their focus was on community-based programs (not clinical or institutional) targeted at children and adolescents up to age 18. They identified 33 systematic reviews covering general prevention ($n = 3$), individual prevention ($n = 5$), family prevention ($n = 8$), and school-based programs ($n = 17$). Overall, the findings are positive in all contexts. The results of systematic reviews and meta-analyses in this area generally show that

developmental prevention programs are successful in reducing offending and aggression. The results from a moderator analysis of the studies show that more intensive and longer lasting programs are effective as are programs that focus on higher risk children. This points to the importance not only of identifying whether programs work in a broad context but also of what types of programs work best in reducing offending.

Community Interventions

Gill (2016) reviewed community-based crime prevention, which includes a wide variety of potential interventions. As we discuss later, here as in other domains there are many areas of intervention for which we have little evidence for program effectiveness. This deficit is particularly surprising in community interventions given the broad scope of the area and the popularity of such approaches in public policy. Gill identified 15 systematic reviews, of which 13 contained a quantitative meta-analysis. Her findings are positive for primary prevention (e.g., mentoring and diversion programs) but much more ambiguous regarding secondary prevention. It is important to recognize the breadth of interventions included in this review and that the findings from the studies reviewed do not show that everything works but often point to specific types of programs within domains that are successful.

Overall, Gill (2016) argued that there is good evidence for the effectiveness of community programs designed to strengthen and restore positive social ties with at-risk youth. In community corrections, she found that the research quality has been strong but results have been mixed at best. The most effective programs target specific risk factors

or directly reengage the offender with the community. At the same time, general deterrence and punishment programs are at best ineffective and at worst harmful. She suggested that proactive engagement with the police and other civic partners to enhance legitimacy and build social cohesion may be the most effective strategies to mobilize communities against crime. Finally, she concluded that the key mechanisms of effectiveness underlying effective community programs across all dimensions are efforts to enhance informal and supportive social controls and reintegration, as well as to maintain or repair social bonds.

Situational Prevention Programs

Bowers and Johnson (2016: 133) concluded in their review of situational prevention programs that “[t]he general message . . . is a positive one; the existing systematic reviews of situational crime prevention tend to indicate significant, albeit modest reductions in levels of crime or victimization as a consequence of this type of activity.”

Situational crime prevention (SCP) measures are defined here as those that aim to prevent crime by reducing opportunities for offending and increasing the effort and risk for offenders (Clarke, 1995). SCP interventions are based on one or more of five general strategies: increasing the effort, increasing the risk, decreasing the rewards, reducing the excuses, and reducing provocations to commit crime (Cornish and Clarke, 2003). Bowers and Johnson mainly considered seven systematic reviews in which researchers examined the impact on crime of improvements to street lighting (Welsh and Farrington, 2008b), closed-circuit television cameras (Welsh and Farrington, 2008a), repeat victimization prevention strategies (Grove, Farrell, Farrington, and Johnson, 2012), public area

surveillance (Welsh, Peel, Farrington, Elffers, and Braga, 2011), neighborhood watch schemes (Bennett, Farrington, and Holloway, 2008), counter-terrorism measures (Lum, Kennedy, and Sherley, 2006), and designated driver initiatives (Ditter et al., 2005). In all of these reviews, the researchers reported desirable crime prevention effects.

Policing

Telep and Weisburd (2016) reported on systematic reviews in policing. They identified 14 completed reviews. Their findings suggest the effectiveness of several policing strategies for addressing crime, including hot-spots policing, problem-oriented policing, directed patrol to reduce gun violence, focused deterrence approaches, and using DNA in investigations. Additionally, they found little evidence that focused policing approaches displace crime to nearby areas. Moreover, they reported that information-gathering interrogation methods seem promising for reducing false confessions and that programs to increase procedural justice show promise for increasing citizen satisfaction, compliance, and perceptions of police legitimacy. Community-oriented policing programs have a small impact on crime and a more substantial impact on improving citizen satisfaction and perceptions of legitimacy.

Telep and Weisburd (2016) also pointed to programs that do not work. Second-responder programs were developed in policing as a way of integrating services into police response to domestic violence. In general, they involve social workers coming to the scene of an incident directly after the police have secured the location. Although it is considered an important innovation in policing, there is little evidence of its

effectiveness. Similarly, researchers have not found empirical support for Drug Abuse Resistance Education (DARE) despite its popularity as an intervention in the United States; nor have they identified evidence of benefits from police stress management programs.

Sentencing/Deterrence

Perry (2016) reviewed systematic reviews on sentencing interventions. For the purpose of her review, sentencing interventions referred to any sanction imposed by a judge via legal proceedings. She identified 16 reviews, of which in only 6 did researchers report on outcomes of effectiveness through the use of meta-analytic techniques (Coben and Larkin, 1999; Feder and Wilson, 2005; Mitchell, Wilson, Eggers, and MacKenzie, 2012; Petrosino, Turpin-Petrosino, and Buehler, 2003; Sarteschi, Vaughn, and Kim, 2011; Wilson, MacKenzie, and Mitchell, 2005). Twelve reviews focused on different sentencing options and four reviews on strategies that used or applied deterrence theory as part of the interventions. Noncustodial sentences and jail-based court interventions (including assertive forensic mental health and ignition interlock devices for the prevention of drink driving) were found to work in the reduction of criminal behavior. Promising initiatives included mental health courts and other mental health schemes. Interventions showing no evidence of any effect included those relating to the severity of the sentence and general deterrence. Mandated substance abuse programs for women, juvenile drug courts, and the use of the death penalty were found to have uncertain impacts.

One deterrence intervention—Scared Straight for juvenile offenders—did more harm than good. This finding is particularly important because it points to the reality that sometimes “cures can harm” (McCord, 2003). Scared Straight programs are highly popular around the world and have been commonly applied in the United States, even becoming the subject of a popular American reality TV series, “Beyond Scared Straight.” But Petrosino et al. (2003) showed through the results of their review that overall such programs lead to higher rates of criminality. They pointed to the importance of recognizing that programs meant to reduce offending can have unintended outcomes. In criminal justice, as in medical treatments, interventions can harm.

Correctional Interventions

Martinson (1974), summarizing the review conducted by Lipton et al. (1975), concluded that focused offender-based rehabilitation programs provided little hope of effectiveness, which led him to recommend larger societal changes to reduce crime (see also Martinson, 1976). Wilson (2016), through his review of 15 systematic reviews examining 36 different correctional treatments, debunked Martinson’s key narrative by providing a clear and unambiguous portrait of the potential for positive outcomes from prison-based rehabilitation. Crucially, Wilson again pointed to the importance of systematic reviews for identifying which programs work best, which are promising, and which have no evidence of effectiveness. As Wilson (2016: 213) noted in summarizing his findings, “[c]learly not all programs work and the evidence for some of the programs is weak.”

Typically, the focus of the programs reviewed by Wilson (2016) was on educational or vocational deficits or on problems that contribute to crime, such as criminogenic thinking or substance abuse. The existing evidence most strongly supports the effectiveness of (a) group-based cognitive-behavioral programs for general offenders; (b) group-based cognitive-behavioral programs for sex offenders; (c) hormonal medication treatment for sex offenders; and (d) prison-based therapeutic communities for substance abusing offenders. We think it is important to note in this regard that our authors did not take a normative position regarding the programs examined. Wilson's review included systematic reviews of chemical and physical castration. Such programs seem inappropriate to many, including the authors, as a method for preventing crime. Nonetheless they continue to be included in meta-analyses in this area (e.g., see Lösel and Schmucker, 2005). Promising evidence supports the effectiveness of adult basic and postsecondary educational programs for general offenders and vocational programs for general offenders. Several other programs had encouraging findings, such as work programs and group counseling for drug abuse, but the weak methodological rigor of the research base constrains the conclusions that can be drawn. Wilson concludes that insight-oriented therapy for sexual offenders and specialized correctional boot camps for substance abusers are not effective.

Drug Treatment

The results of the final assessment revealed what has been learned from systematic reviews of the effectiveness of drug treatment interventions in reducing crime. Holloway and Bennett (2016) identified eight systematic reviews containing 23 different meta-

analyses in this area. The results of 6 of the 23 analyses showed an overall significant and desirable effect of the experimental drug interventions in reducing crime. The results of 15 analyses found no significant difference in the outcomes of treatments relative to the control condition, and 2 analyses found a significant unfavorable effect. Again, these findings point to the importance of considering backfire effects in crime and justice interventions.

The largest and most consistent positive treatment effects were found for both naltrexone drug treatment and therapeutic communities. Holloway and Bennett (2016) noted that this finding is important because it indicates that both medication-based and social interventions can successfully reduce drug use and recidivism. The single treatment type described as promising was buprenorphine substitution. Programs defined as having no effect or an undesirable effect included other forms of substitute prescribing (excluding buprenorphine), reintegration and recovery programs, and supervision and surveillance.

An interesting finding in this review is that at least some drug interventions are effective in reducing criminal behavior. Holloway and Bennett (2016) noted that this is striking in part because drug interventions rarely have crime reduction as a specific aim. They argued that the impact may be indirect as reducing drug involvement may in turn lead to less involvement in criminal behavior. But we think this fits more generally into a growing recognition of the unintended benefits of social intervention programs. For example, increased police presence to deter terrorism has been found to have crime prevention benefits (Di Tella and Schargrodsky, 2004) as have security barriers (Gunaratna, 2008). Programs to increase healthy childbearing have been shown by

researchers to have strong crime prevention benefits as well (Olds et al., 1998).

Therefore, it is important to consider the impact of many other types of social programs that might be expected to have indirect influences on crime.

What Can We Learn From a Quantitative Summary of the Reviews?

Through our narrative review, we provide a portrait of the effectiveness of crime prevention and rehabilitation programs that is directly at odds with the “nothing works” narrative that dominated thinking in these areas after Martinson (1974). There is simply a good deal of evidence that crime prevention practices and programs are effective.

Nevertheless, as we noted, not all such programs are effective and indeed some programs cause harm. This reinforces the importance of the evidence-based policy movement that has been growing in crime and justice since the turn of the century. We can reduce crime and prevent reoffending. But it is important to develop solid evidence on programs and practices so that we can identify whether they work, which are most effective, and which cause harm.

A quantitative summary of the systematic reviews included in our study reinforces this conclusion (Figure 1). What we have done here is include in a forest plot the average standardized effect size for each systematic review included in the seven review areas. It is important to note that not all of the systematic reviews examined had quantitative summaries including meta-analyses; accordingly, the number of reviews reported on here is smaller than the overall number of reviews that were examined across

the seven areas.³ Summary effect sizes from each meta-analysis were converted into odds ratios, and then confidence intervals were calculated around those ratios. We want to emphasize, as noted, that calculating an average mean effect for all of the systematic reviews included is inappropriate. In several cases, single studies are included in different systematic reviews (see earlier), and therefore, they appear more than once across the categories, violating the meta-analytic assumption of independence (Lipsey and Wilson, 2001). At the same time, we think that we can learn a good deal from looking across the reviews more generally for patterns, or at least for a broad understanding of the types of effects that are observed in crime and justice reviews.

The reviews are arranged in accordance with the magnitude of effect sizes, and for each review, we add a citation noting the broad area in which it was reviewed. The mean program effect is indicated by a black dot, and the line around the dot is the confidence interval for the estimates. Most striking in Figure 1 is the weighting of the reviews on the right-hand side of 1 (odds ratio [OR] > 1). In these assessments, an odds ratio greater than 1 indicates that the program impact is in favor of treatment. Figure 1 shows that in most cases, the interventions reduced crime and antisocial behavior. This figure simply depicts what the findings from our earlier narrative review imply. There is significant evidence today of the ability of programs and practices to have desirable

³ The mean effect sizes for two reviews that were included in Farrington et al. (2016) are not included in Figure 1 because it was determined that the weighted method used by the original authors was not consistent with the approach used here (see Robinson, Smith, Miller, and Brownell, 1999; Sukhodolsky, Kassinove, and Gorman, 2004). Additionally, Holloway and Bennett (2016) mistakenly reversed three effect sizes in their original report: Perry et al. (2008), therapeutic communities and aftercare; Kirchmayer et al. (2002), naltrexone plus behavioral therapy; and Mattick, Breen, Kimber, and Davoli (2009), methadone maintenance therapy. We have corrected these errors in Figure 1.

impacts on offenders and places across a broad array of criminal justice areas. If we ask “what works in crime prevention?” our answer is that there is much that works, and many interventions have large effect sizes. For example, in many of reviews, researchers have reported odds ratios greater than 1.5, implying that treatment increases the odds of a desirable outcome by 50% or more.

But in Figure 1, we illustrate that some average program effect sizes are not statistically significant. Some of the effect sizes are close to $OR = 1$, meaning no effect, or $OR < 1$, which suggests that interventions may even cause harm. It is important to recognize that not all programs have been found to be effective. Therefore, crime prevention and rehabilitation programs need to be subjected to rigorous evaluation. Not every logic model or theory will produce positive outcomes in practice, and some will cause harm. We must carefully evaluate programs and practices before they are widely used in crime prevention systems. Nonetheless, across all domains, the findings from reviews of crime prevention and rehabilitation programs have revealed effectiveness.

*** FIGURE 1 ABOUT HERE ***

Additional Lessons Learned

We identified two broad themes in our work regarding additional lessons learned across all the reviews that we think are important to emphasize. The first is that the results of existing reviews generally have not led to specific guidance to practitioners and policy makers. We simply have not gotten enough “into the weeds” of crime prevention in these

areas. We need a “next generation” of studies (Gottfredson et al., 2015) or “second-generation studies” (Weisburd and Telep, 2014) to advance evidence-based practices in the field. But we also need to consider the broader group of factors that will influence widespread adoption of programs (see Spoth et al., 2013). The second theme—related to the first—is that we do not have enough primary evaluation studies, and too few of them have employed randomized experimental designs (or even the strongest quasi-experimental methods).

In each area we reviewed, there has been a lack of specific guidance, and a failure by researchers to cover a broad array of programs. Gill (2016: 105) noted, for example, that “there is still a great deal more to be learned about what works in community-based interventions,” especially given the wide range of such programs in practice. Bowers and Johnson (2016) examined just seven systematic reviews covering specific situational crime prevention practices. Situational crime prevention has become one of the most widely practiced crime prevention approaches; yet, we have only limited information about it. Telep and Weisburd (2016) noted that most standard police practices (see Weisburd and Eck, 2004) have not been examined, and the results of the reviews that exist have provided police with little guidance regarding what specifically they should do. Examining the review by Perry (2016), we are struck by the extent to which studies seem serendipitous, a sort of convenience sample of possible treatments. In the vast array of sentencing options, only a few have been studied.

It is not just that certain areas are not covered. A broader problem can be observed in these reviews. Even when we show that certain areas of treatment or intervention are effective, the findings of systematic reviews generally do not provide adequate guidance

to practitioners or policy makers who need to make specific decisions about what works. Even in the case of hot-spots policing, which is generally regarded as having the strongest evidence base in policing (Telep and Weisburd, 2012), we have just a small number of studies aimed at covering specific types of interventions. If criminology is to provide guidance for evidence-based practice, its researchers must begin to provide evidence that tells practitioners specifically what they must do.

For example, in the problem-oriented policing review, the researchers reached a general conclusion regarding the potential effectiveness of problem-oriented policing in reducing crime and disorder, but in the ten studies in the meta-analysis, the researchers provided information on only a handful of problem-solving approaches (Weisburd et al., 2008). Because of the range of different problems police address by using problem-oriented approaches and the multitude of different possible responses, the available evidence made it difficult for us to reach strong conclusions about the relative effectiveness of different approaches. It is no surprise, then, that in many of the systematic reviews we examined, the researchers concluded by noting the need for additional rigorous research. More generally, one limitation of the approach taken in most of the systematic reviews examined is that methodological inclusion criteria are used that exclude observational research designs without comparison or control conditions. This is particularly true, for example, in the case of situational prevention and problem-oriented policing studies, which often use a case study or a before–after evaluation method. Although the approach of excluding evaluations without comparison or control conditions makes sense in terms of the validity of the outcomes examined, it reduces considerably our ability to draw specific conclusions about specific interventions.

The findings from the reviews examined here tell a positive story about crime prevention, but they are in some sense what might be called “first-generation studies.” They provide enough evidence to overturn the narrative of nothing works and reveal that in each of the seven areas we have examined, there is potential for successful crime prevention and rehabilitation programs. Nevertheless, they generally do not provide information that is the key to what can be called “second-” (Weisburd and Telep, 2014) or “next-” generation studies (Gottfredson et al., 2015). The results of such studies would lead to specific guidance regarding what types of programs are effective, for which populations, and in which types of settings (Gottfredson et al., 2015)

But having more specific information on what programs and practices work in specific situations is in itself not enough to guarantee large-scale adoption of evidence-based programs. Prevention research and health-care programs proven effective by researchers have often not been adopted or, when adopted, have not been implemented with fidelity in the field. In a review calling for Type 2 translation research, Spoth and colleagues (2013: 321) argued that it is time to focus more effort on identifying “the complex processes and mechanisms through which tested and proven interventions are integrated into practice and policy on a large scale and in a sustainable way, across targeted populations and settings.” Lum, Telep, Koper, and Grieco (2012) discussed the need to build infrastructure to support receptivity for research, including institutionalizing findings into policing systems, as well as the difficulties in doing so. This is a promising area for investigation, and there are recent efforts to provide tools for practitioners that allow them to assess whether their programs are scaled up in ways consistent with research evidence (e.g., see the SPEP tool developed by Lipsey, Howell, Kelly,

Chapman, and Carver, 2010; and the matrix translation tool developed at the Center for Evidence Based Crime Policy; see Lum, 2009; Lum, Koper, and Telep, 2011).

We found little discussion in the systematic reviews that we examined regarding “how” programs can be scaled up in practice in a sustainable way. The results of the policing reviews provide a good example for the need for consideration of Type 2 translation in systematic reviews in criminology. It is widely recognized, for example, that the findings from reviews of hot-spots policing provide rigorous evidence of its effectiveness in preventing crime (e.g. Braga, Welsh, and Schnell, 2015). But the results of these reviews tell us little about how hot-spots policing can be implemented in police agencies in ways that will maximize the fidelity and sustainability of hot-spots policing in the field. Sherman and colleagues (2014: 96) raised this question directly in a paper that examines the application of hot-spots policing in Trinidad. In responding to the realities of implementing a hot-spots program on a large scale, they noted:

Despite a flourishing body of research (if not formal theory) on the effects of hot spots policing (Braga, Papachristos, and Hureau, 2012), there is neither theory nor evidence on what actions police leaders should take to create and maintain the causes of a successful hot spots patrol strategy (HSPS). Criminologists are usually more interested in crime than in organizational behavior. Yet, the applied criminology of police management requires that a theory of crime reduction be based on an evidence-based theory of what works in leading police service delivery on a large scale, eventually covering any part of a jurisdiction where crime is concentrated into hot spots.

The Dallas Patrol Management Experiment (Weisburd et al., 2015) provided a direct example of this disconnect between the focus of academics and the reality of wide-scale implementation in the field. The experiment tested whether the provision of information on where police patrolled in the prior week would increase crime prevention at the beat and hot-spot levels. Weisburd et al. found that approximately 25% of patrol officer time was unallocated, and they sought to reallocate that patrol from random to directed patrols. The authors found a statistically significant impact of the program on the levels of patrol at the hot spots and on crime. Nevertheless, they did not show significant impacts on crime at the beat level. In trying to understand this disconnect, Weisburd et al. argued:

However, while the police were able to increase hot spots patrol they did not take advantage of enough unallocated patrol time at hot spots for this to have meaningful impacts on crime in the city overall. In 15.8 % of the division/watch/week units, there were no directed patrol hot spots identified at all. In only 34.1 % were four or more identified. It seems reasonable to us to conclude that hot spots patrol areas were not a constant fixture of patrol efforts in Dallas, but rather a strategy focused on dealing with relatively isolated problems. For hot spots patrol to be expected to have a more general influence on crime, it would have to be applied more broadly and with more intensity. Our study suggests that police and scholars must ask not just “what the strategy is” that will be effective but also how we gain

enough dosage for such strategies to have large-scale crime prevention impacts across the city. (Weisburd et al., 2015: 384).

Although there is much work to be done in focusing crime and justice research and practice on second-generation studies and Type 2 translation, there is also evidence that evidence-based programs can be scaled up and widely implemented in practice. Undoubtedly, the most relevant case history is the Washington State Institute for Public Policy's (WSIPP's) comparative benefit–cost model as applied to developmental prevention programs (see Welsh, Sullivan, and Olds, 2010).

In 1997, the Washington State legislature commissioned the Institute, the nonpartisan research arm of the legislature, to assess the effectiveness and economic efficiency of a range of crime prevention and criminal justice programs with the aim to “identify interventions that reduce crime and lower total costs to taxpayers and crime victims” (Aos, Barnoski, and Lieb, 1998: 1). To achieve this, the Institute developed a comprehensive benefit–cost model along the lines of a “bottom line” financial analysis, which it considered to parallel the approach used by investors who study rates of return on financial investments (Drake, Aos, and Miller, 2009). The Institute concluded that 37 out of 60 youth prevention programs had benefits that exceeded their costs (Aos et al., 2004).

The Institute's research proceeded in five stages. First, a systematic review of experimental and high-quality quasi-experimental evaluations was conducted. Meta-analytic techniques were used by researchers at the Institute to estimate each program's effectiveness, and effect sizes were converted into numbers of crimes saved. Second, an assessment of whether previously measured program results could be replicated in

Washington State was undertaken. The main concern was to estimate what would happen when the program was scaled up to statewide implementation. For example, Aos, Phipps, Barnoski, and Lieb (1999) discounted the effect sizes of developmental prevention programs by 25% to account for the effects of taking them to scale on a statewide basis. Third, an assessment of program costs was conducted, estimated on the basis of what it would cost the Washington State government to implement a similar program. Fourth, the monetary benefits of each program were estimated, including savings to the justice system and crime victims. Fifth, a benefit-to-cost ratio was calculated. Based on this, programs were judged by the Institute according to their likely economic efficiency in large-scale implementation in Washington State.

After the Institute released its first set of reports, the legislature authorized several system-level randomized controlled trials of the most effective and cost-beneficial juvenile and adult intervention programs. The results of these trials helped to refine local practice and service delivery. By 2006, researchers at the Institute had systematically reviewed and analyzed almost 600 of the highest quality evaluations of crime prevention and criminal justice programs, estimated the costs and benefits of effective programs, and “projected the degree to which alternative ‘portfolios’ of these programs could affect future prison construction needs, criminal justice costs, and crime rates in Washington” (Aos, Miller, and Drake, 2006: 1). This work was commissioned by the legislature to address the projected need for two new state prisons by 2020 and possibly a third by 2030, based on predicted crime rates.

As a result of the findings from evaluations of a moderate-to-aggressive portfolio of evidence-based programs (with an expenditure of \$63 to \$171 million in the first year),

it was found that a significant proportion of future prison construction costs could be avoided, approximately \$2 billion saved by taxpayers, and crime rates lowered slightly (Aos et al., 2006: 16). A year later, the state legislature abandoned plans to build one of the two prisons and in its place approved a sizeable spending package (\$48 million) on evidence-based crime prevention and intervention programs (Drake et al., 2009). The results of this well-regarded and influential case study reveal how small-scale evaluations can be used to guide large-scale public policy decisions. It has been followed by national and international efforts to develop similar tools for research and policy analysis in different settings (Aos and Drake, 2010; Pew Center on the States, 2012). In the United Kingdom, the Youth Justice Board has funded the Dartington Social Research Unit to replicate these analyses (see investinginchildren.eu/cost-benefit).

The WSIPP example suggests much promise in the application of evidence-based science in public policy. But whatever the promise of the science or program evaluation, we point to a lack of sufficient primary studies. This is not a new problem and has been raised numerous times by scholars (e.g., see Lipsey, 2003; Lösel and Schmucker, 2005). But through our review of systematic reviews, we can starkly emphasize this point. Given the importance of crime prevention and rehabilitation in society, we have a paucity of primary studies. Telep and Weisburd (2016) identified 225 independent studies in their policing review. One could argue here that this is positive news, especially when just a few decades ago there were few rigorous studies in policing. But even here, one has to ask whether 225 studies could possibly cover even a fraction of the entire range of policing practices. Therefore, we are left with admiration for what criminology has

achieved in this area and others. But it is time to use the positive evidence from existing studies to advocate for a major increase in evaluations conducted across the field.

More generally, the results of our work emphasize just how important it is to conduct systematic reviews. Again, the number of published systematic reviews identified in these reviews is encouraging, especially when one considers that just a decade ago, there were only a handful of systematic reviews published on crime prevention and rehabilitation. The Campbell Collaboration, which was founded in 2000, deserves considerable credit for this growth in the amount of systematic reviews being conducted in crime prevention and rehabilitation. Specific funders like the former National Police Improvement Agency and the Home Office in the United Kingdom and the National Institute of Justice and Smith-Richardson Foundation in the United States also have at various times encouraged the development of systematic reviews in criminology. But there are still many areas and specific interventions that have not been reviewed. And without systematic review, it is difficult to identify just how many studies we have in a particular area. We cannot really take stock of the state of primary studies more generally in criminology until we have more published systematic reviews.

Of course, it is not simply the number of studies but their quality that is important in developing a convincing evidence base for interventions. Authors of the reviews in each of our seven areas noted the limitations in drawing inferences from weaker studies. Bowers and Johnson (2016) pointed out that few studies in the systematic reviews they examined used randomized experimental methods. Telep and Weisburd (2016) found a large number of randomized field trials relative to many of the other areas covered but still fewer than a quarter of the evaluations in policing used random assignment.

Although our conclusion here is not that different from that of others (Lum, Koper, and Telep, 2011; Nelson, Wooditch, and Dario, 2015; Weisburd, Petrosino, and Mason, 1993), we think it important to continue to emphasize the need for the use of strong evaluation methods. We have come a long way in many areas in terms of implementing strong quasi-experimental and experimental studies, but this remains a concern in systematic reviews in crime and justice.

Extending Meta-Analytic Methods

Our assessment also highlights areas in which we need to expand systematic review and meta-analytic methods so that they have broader relevance and allow us to dig more deeply into the mechanisms underlying what works. As part of this assessment, Ajzenstadt (2016) explored how qualitative studies can be integrated into systematic reviews; Caudy, Taxman, Tang, and Watson (2016) examined how we can improve methods for summarizing systematic reviews across domains; and Mallender and Tierney (2016) highlighted the need for greater use of economic methods, including cost–benefit analysis, in systematic reviews of crime prevention and rehabilitation programs.

Often in evaluation research we are confronted with a black box of findings in which we know the program had an impact but it is unclear which mechanisms produced that impact. This presents a challenge to policy makers and practitioners seeking to implement evidence-based practices in their jurisdictions. In part, better quantitative data about treatments and outcomes can add important information to the question of how or why a treatment worked or did not work, but qualitative data are particularly well suited for such questions and can help us better distinguish between theory failures and program

failures. For example, did implementation problems in a specific research project cause the failure to show desirable effects, or was the program model flawed from the outset?

Ajzenstadt (2016) found just 15 articles in which researchers summarized qualitative studies from an exhaustive search of thousands of documents. Published systematic reviews of qualitative studies in crime prevention and rehabilitation are rare. This is not surprising, but again our method of assessing the population of systematic reviews allows us to see clearly what we have assumed. When we conduct systematic reviews of qualitative data, we face more complex problems in summarizing information than we do when conducting traditional quantitative data reviews. Nevertheless, Ajzenstadt found several techniques developing in this area, such as meta-summary, meta-synthesis, meta-interpretation, and meta-ethnography. When we conduct qualitative reviews, we face additional complications in sampling and evaluating data quality. There is simply not as much agreement on qualitative methods in reviews as has become the case for quantitative reviews. Thus, traditional systematic review groups such as the Campbell Collaboration could play an important role in helping to develop methods of qualitative synthesis. The rewards of such an approach seem significant to us. For example, researchers in one systematic review examining programs to reduce stress among police officers (Patterson, Chung, and Swan, 2012) used qualitative data to identify that a lack of trust held by police officers toward the police organization's involvement in health issues limited the effectiveness of programs to reduce alcohol consumption, smoking, and stress symptoms.

Caudy et al. (2016) discussed the Evidence Mapping to Advance Justice Practice (EMTAP) project, in which they developed 18 assessments of health-related correctional

interventions in crime and justice summarizing 300 systematic reviews. The findings from their assessment raise a problem that was common across all the domains of crime prevention and rehabilitation we examine in this article—a lack of consistency in how authors reported the findings of systematic reviews and meta-analyses. This problem is often defined as “descriptive validity” by primary evaluation researchers (Farrington, 2003; Gill, 2011; Lösel and Köferl, 1989; Perry, Weisburd, and Hewitt, 2010), but Caudy et al. suggested that the issue becomes even more significant when multiple systematic reviews are compiled.

More generally, Caudy et al. (2016) provided encouraging confirmatory evidence of the general conclusions of our assessment. When looking at health-related correctional interventions in crime prevention and rehabilitation, they concluded that “the findings from these syntheses were generally positive suggesting that correctional treatment programs can effectively reduce recidivism and promote other positive outcomes (e.g., reduced substance use, improved vocational/educational skills)” (Caudy et al., 2016: 322).

Economic data from program evaluations are crucial if we want to make research more useful to policy makers (e.g., Dominguez and Raphael, 2015; Welsh, Farrington, and Gowar, 2015). Mallender and Tierney (2016) in their review of systematic reviews in this area argued that cost–benefit analysis is the key to understanding whether programs are worthwhile to implement; nevertheless, although such assessments are becoming more commonplace in criminal justice settings, they remain rare. Mallender and Tierney were able to identify just four systematic reviews, containing 26 primary studies in the domains of situational prevention, developmental prevention, correctional interventions,

and community interventions, which included economic data. Benefits exceeded costs in 20 of those studies—a promising start for cost–benefit analysis in crime prevention and rehabilitation programs.

Clearly, economic analysis is an area of systematic review that needs to be focused on more directly in the future. Again, we view this as a first-generation/second-generation problem. When criminologists were simply trying to show that interventions could be effective, the relative costs and benefits were not as critical. But now that we know that many programs are effective, it is time to focus more attention on the relative economic benefits or liabilities of specific types of programs. An intervention may be effective but simply too costly to implement on a large scale. On the other hand, a program may produce modest benefits at minimal cost, suggesting it should be widely applied. Mallender and Tierney (2016) pointed to the economic decision models used in fields such as public health (e.g., NICE, 2009), which allow the economic effects of interventions to be modeled based on a single well-conducted randomized trial or decision-analytic techniques, as a way to ensure systematic reviews incorporate cost–benefit data even before it is routinely included in primary studies.

Importantly, as emphasized in a recent examination of cost–benefit analysis in crime research in this journal, cost–benefit analysis must be balanced with a recognition of the varied goals of criminal justice. Issues of fairness, equity, and public support for the legitimacy of criminal justice must be key concerns in assessing programs and practices. As Dominguez and Raphael (2015: 591) noted, in their presentation of the utility of cost–benefit approaches:

However, we do not support the proposition that policy choices should strictly adhere to and be determined solely by the results of cost–benefit calculations. Cost–benefit analysis alone often fails to consider adequately the equity implications of policy alternatives. Equity is an especially important criterion in criminal justice policy, and perhaps it is a more important criterion relative to other policy domains. The burdens of criminal justice enforcement are disproportionately borne by the poor and the marginalized, and often they can exacerbate existing societal divides, such as inter-racial economic disparities or the relative deprivation of individuals with severe mental illness. Moreover, an unequally distributed burden of the impact of criminal justice enforcement may delegitimize law enforcement, the criminal justice system more broadly, and government in general in specific communities. Inadequate consideration of equity, fairness, proportionality, procedural justice, and disparate impact may ultimately serve to undermine and offset the value of crime-control benefits achieved through specific policy strategies.

Conclusions

It is difficult to imagine that just four decades ago criminologists had accepted the narrative that nothing works in crime and justice interventions. We can see this today in the continued dominance of “root causes” research in criminology. We certainly agree that looking into the broad sociological and psychological variables that influence crime is a valuable effort in criminology. But Martinson’s (1974, 1976) critique just 40 years

ago and his conclusion that we should abandon the search for programmatic responses to crime and criminality are simply wrong. At least for the last decade there has been a growing body of evidence that has led researchers to conclude that many programs and practices can reduce recidivism, drug use, disorder, and crime (Cullen, 2005; Lipsey et al., 2001; Lipsey and Cullen, 2007; Sherman et al., 2006; Visher and Weisburd, 1997; Weisburd and Eck, 2004). But the results of our work provide the broadest review of such evidence to date and are based on more than 100 systematic reviews that included assessment of thousands of primary evaluations.

In the areas of developmental and social prevention, community interventions, situational prevention, policing, sentencing, correctional interventions, and drug treatment interventions, we find consistent evidence of programs and practices that work. Importantly, our conclusion is that not everything works. We think the idea that everything works would be as naïve as the “nothing works” narrative of the last century. Rather, we find that there is much evidence of practices that are effective. There is also evidence of less effective practices and, importantly, of practices that may even cause harm. Finally, it is time to expand our toolkit for assessing what works to incorporate qualitative data and cost–benefit analysis to understand better why programs work, if they provide economic benefit, and how they can be implemented at scale. The paucity of such evidence limits the impact we can have on the real world of crime and justice.

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Table 1. Identified Systematic Reviews and Primary Studies

Domain	Researchers	<i>N</i> of Systematic Reviews	<i>N</i> of Primary Studies
Developmental prevention	Farrington, Ttofi and Lösel	33	1,580
Community prevention	Gill	15	369
Situational prevention	Bowers and Johnson	7	153
Policing	Telep and Weisburd	17	285
Sentencing and deterrence	Perry	10	380
Correctional interventions	Wilson	15	479
Drug treatment interventions	Holloway and Bennett	23	159

Notes. There were two instances in which a systematic review was included in more than one meta-analytic domain, so the overall number of systematic reviews is 118. *N* = number.

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