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Cong Liu · Jie Ma
Editors

Workplace Ostracism

Its Nature, Antecedents, and Consequences

palgrave
macmillan

Editors
Cong Liu
Hofstra University
Hempstead, NY, USA

Jie Ma
Jinan University
Guangzhou, Guangdong, China

ISSN 2662-3625 ISSN 2662-3633 (electronic)
Palgrave Explorations in Workplace Stigma
ISBN 978-3-030-54378-5 ISBN 978-3-030-54379-2 (eBook)
https://doi.org/10.1007/978-3-030-54379-2

This Palgrave Macmillan imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

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CHAPTER 9

Research Methods for Studying Workplace Ostracism

Paul E. Spector and David J. Howard

There is growing awareness that employee mistreatment is a serious problem because it has been linked to a variety of negative outcomes for employees and organizations (Bowling & Beehr, 2006). There are many forms of mistreatment ranging from fairly minor acts of rudeness to bullying and physical violence. Workplace ostracism stands out as a form of mistreatment because it is for the most part the absence of behavior (ignoring someone or failing to include him or her in activities and discussions) rather than actively abusing or insulting someone. The passive nature of ostracism creates special research challenges because it must be inferred from patterns of behavior and what is not done rather than what is done. An employee might report that he or she has experienced ostracism, but linking that purely subjective internal state to something more objective is difficult, and can limit the sorts of inferences that we might draw about the antecedents of ostracism.

P. E. Spector (✉) · D. J. Howard
University of South Florida, Tampa, FL, USA
e-mail: pspector@usf.edu

C. Liu and J. Ma (eds.), *Workplace Ostracism*,
Palgrave Explorations in Workplace Stigma,
https://doi.org/10.1007/978-3-030-54379-2_9

This chapter will explore the methodological issues involved in studying workplace ostracism. Part of our discussion will include an overview of the methods that have been used in this literature. We will include the assessment of ostracism and the research designs utilized in published studies. Much of our discussion will focus on the nature of the inferences that can reasonably be made using the typical methods used to study ostracism in the organizational sciences. We will also make suggestions about the sorts of methodologies that might be applied to be able to more confidently reach the conclusions we generally wish to make about potential antecedents and consequences of workplace ostracism.

How Has Workplace Ostracism Been Studied?

In May 2019, we conducted a literature review of workplace ostracism using the search term "workplace ostracism" in the topic field within the Web of Science database. This search returned 121 articles. Thirteen were unavailable, reducing the number to 108. After reviewing each paper, 35 articles were excluded from further analysis because they were not specifically relevant to workplace ostracism, but rather focused on another construct entirely, or focused on social ostracism and/or global ostracism and did not measure ostracism in the workplace. The remaining 73 articles featured 95 samples (studies). We content analyzed the method sections of those articles and coded for features of the research designs and measures used.

Table 9.1 Research designs used in workplace ostracism studies

Method	*Number of studies*	*Percent*
Longitudinal or time-lagged	42	44
Cross-sectional	26	27
Multiple data sources	25	26
Experimental	14	15
Theoretical papers including reviews	4	4
Daily diary/experience sampling	1	1
Interventions	1	1
Qualitative (Interview)	1	1

Table 9.1 summarizes the number of studies that used various design features to investigate workplace ostracism. Most used survey methods (but some of those studies incorporated multiple design features (e.g., time-lagged studies with supervisor-employee dyads). Thus, the number of studies in the table sums to more than 95. As can be seen, the most commonly used design incorporates time, and was either longitudinal (all variables assessed repeatedly) or time-lagged (different variables assessed at different times). Cross-sectional designs were also popular, used in about a quarter of the studies. About a quarter of the studies used more than one source of data, such as self-reports and supervisor reports.

There were more than a dozen studies that used experimental designs. Some of these used computerized simulations (e.g., Cyberball) and did not take place in the workplace or use employees as their participants. We included them in our content analysis because they are written for organizational research journals and are framed in a workplace context (e.g., Kouchaki & Wareham, 2015; Lustenberger & Jagacinski, 2010). Daily diary designs, intervention studies, and qualitative methods were not popular in this area, as we found only a single case of each.

Table 9.2 summarizes the scales used to assess workplace ostracism. As can be seen, almost three-fourths of the studies used the Workplace Ostracism Scale (Ferris, Brown, Berry, & Lian, 2008), with the remaining studies using a variety of ad hoc measures designed for the particular study, or other less used measures. For example, Al-Atwi (2018) categorized some common workplace ostracism behaviors as "negative ties at work" and measured these behaviors using dichotomous (yes/no) items such as "Sometimes people at work don't feel comfortable or easy with

Table 9.2 Measures used in workplace ostracism studies

Scale or manipulation used	*Number of studies*	*Percent*
Workplace Ostracism Scale[a]	68	72
Ad hoc	9	9
Computerized simulation (e.g., Cyberball)	6	6
Scenario vignettes (mostly based on Hitlan 2009)	6	6
WES-R[b]	4	4
Ostracism intervention behavior scale[c]	2	2

[a]Ferris et al. (2008)
[b]Hitlan and Noel (2009)
[c]Fiset and Boles (2018)

us, therefore, they try to avoid interacting with us. Do you perceive that this person avoids interacting with you?" (p. 655).

Ostracism and the Nature of Inference

Ostracism is studied as a form of workplace mistreatment that is assumed to have detrimental effects on people and organizations. There are two fundamental questions that drive much of this research. First, what are the antecedents of workplace ostracism? Included are environmental conditions within organizations that might encourage or fail to discourage this behavior, and characteristics of actors who engage in this behavior, and characteristics of targets. Second, what are the potential consequences of workplace ostracism? This includes the impact of workplace ostracism on individual employees (including targets and observers) and on organizations. The goal of these lines of research is to provide convincing evidence that supports the assumed role of specific factors as antecedents or consequences. Drawing such inferences is challenging using the typical methods applied in this domain, which is unfortunate as knowing what might drive ostracism would be important in designing effective interventions, and knowing what serve as consequences would provide insights about the importance of reducing it.

Assessment of Workplace Ostracism

As with many organizational constructs, the typical methodology for assessing ostracism is to rely on humans as measuring instruments. Given the personal nature of ostracism, and the fact that it is often the absence rather than presence of behavior that is of interest, the most direct way to assess it is with self-reports. For example, Ferris et al. (2008) developed the 10-item Workplace Ostracism Scale, used in most ostracism studies, that is designed as a self-report instrument to assess employee experiences. Respondents indicate on a 7-point scale from "Never" to "Always" how frequently each experience occurs at work, such as being excluded from conversation or ignored. Although the scale is typically used as a self-report instrument, it is also used with alternative sources, such as coworkers or supervisors, to indicate how often they observe each item. Others will certainly not be aware of all interactions (or failed interactions) that occur for a target employee, but they might have a general impression of whether ostracism is occurring.

Another approach to studying ostracism is to view it from the perspective of the actors—employees who engage in ostracism against others. Many measures of mistreatment include ostracism items, but they are combined with other acts so that it is not possible to isolate them in their potential antecedents and consequences. In fact Ferris et al. (2008) noted that they developed much of their item pool for the WOS by adapting items from several mistreatment scales, such as bullying (Fox & Stallworth, 2005) and deviance (Bennett & Robinson, 2000). If the focus is on specific behaviors, the same items can be written to assess behaviors done by actors and behaviors experienced by targets. Few studies have focused on the ostracism behaviors as reported by actors.

It is also possible to study ostracism without the use of questionnaires. Possibilities include interviews of individuals to ask about ostracism from the perspective of actors and targets. Although this approach still relies on people's reports, interviews allow for more in-depth exploration of the sorts of behaviors people say they engage in, and the behaviors they have experienced. This can be important because ostracism can be subtle, and it is patterns of behavior in a particular context that results in someone perceiving themselves to be ostracized. As noted, our review found only a single interview study.

Another possibility is to avoid a self-report study entirely, and look for other ways of getting at ostracism in the workplace. This could involve the analysis of incident reports where employees file grievances about their mistreatment, to look for instances of ostracism. For example, one could look at reports of complaints for ethnic harassment to see the extent to which ostracism is mentioned.

Design and Inference in the Study of Workplace Ostracism

Three Forms of Inference

In the context of health risk factors, Kraemer, Stice, Kazdin, Offord, and Kupfer (2001) suggest three forms of evidence. In our context, we can talk about antecedent conditions that increase an employee's risk of ostracism, and extend that to the connection of ostracism to potential outcomes. A **correlate** is a condition that has been shown to relate to workplace ostracism, perhaps in a cross-sectional survey study. The results of this type of study allow us to infer that that condition is related to

workplace ostracism, and that it might be an antecedent, but this method does not allow us to draw firm conclusions beyond association. At best we can say that our results support the possibility that the condition in question is an antecedent, or that we could not rule it out based on our data. A **proxy factor** is a condition that can predict future workplace ostracism or consequences of workplace ostracism. For example, we might find that people who report being ostracized at work in a survey are likely to quit their job at a 6 month follow-up. Thus ostracism assessed at Time 1 predicts future turnover assessed at a subsequent time. The use of this sort of two-wave research design where you can show that something occurring at Time 1 predicts something at Time 2 that had not occurred prior to Time 1 gives an added level of confidence that turnover might have been the outcome of workplace ostracism. The limitation is that we cannot be certain that workplace ostracism was in fact responsible for the turnover. It is feasible that the workplace ostracism—turnover relationship is spurious. In other words, there is some condition at work related to workplace ostracism that is the real driver of turnover. For example, suppose employees are ostracized because they are poor performers. Their failure to adequately complete job tasks puts a burden on coworkers who retaliate with social exclusion. The underperforming individuals might quit their jobs, not because they were ostracized, but because they were getting pressure from supervisors to perform better.

The third form of evidence is a **causal risk factor**. This is a condition that, when manipulated, will lead to the consequence in question. Thus we might introduce an intervention designed to reduce employee mistreatment including ostracism. A pretest-posttest comparison of data collected both before and after an intervention would demonstrate that the intervention had a positive effect on workplace ostracism by employees. Even better would be an experiment in which employees were randomly assigned to the intervention or a control condition. If ostracism declined for the intervention group from pretest to posttest, but did not decline for the control group, one would have some confidence that the intervention was the cause of the decline in ostracism. Although one can conclude that the intervention was effective, it is not entirely certain that the intervention itself, and not something associated with the intervention was the real cause.

Manipulationist Approach to Causality

Philosophers of science have provided a number of approaches to addressing the issue of causal inference. Perhaps the most relevant to the issue of organizational research (Spector, 2019) comes from the manipulationists (Hausman & Woodward, 1999; Illari & Russo, 2014; Woodward, 2017). According to this view, there are four elements to determining causality: a proposed cause (X), a proposed effect (Y), an intervention that manipulates X, and a temporal sequence of:

$$\text{Intervention} \rightarrow X \rightarrow Y.$$

For example, suppose we want to test the idea that supportive supervisor behavior (X) reduces ostracism behavior by subordinates (Y). We can create an intervention to encourage supportive supervisor behavior, although manipulationists note that an intervention does not have to be created by a researcher. It can merely be observed by the researcher as in a naturally occurring experiment. The idea is that X is manipulated through an intervention (e.g., conducting a training intervention to increase consideration), and then subsequent effects (e.g., later levels of ostracism) are observed. There are three additional conditions, however, that must be met in order to draw causal conclusions.

- The change in X is only due to the intervention and not something associated with the intervention. Control groups are used to address this possibility, for example, by offering placebo training to a control group as a means of showing that results were not just due to the fact that the intervention group was trained. However, even with the most carefully conducted randomized experiment, conducted in the field or laboratory, there is the possibility that it was not the content of the training itself that had the effect, but some other unintended factor. For example, in a field experiment suppose that during the supervisor training, the trainer shows a clip from a popular movie, and after seeing the clip, many of the participants decide to watch the movie on their own time, even though doing so was not part of training or suggested by the trainer. Further suppose that the training itself was ineffective, but it was viewing the movie that had the intended effect. In a laboratory study there is the possibility that demand characteristics or experimenter effects are responsible for the results (Rosenthal & Rosnow, 2009).
- The intervention only acts through X and not directly on Y. In this case suppose the employees are aware that supervisors are being

trained to be more supportive, and that knowledge is having a trickle-down effect on subordinates. The intervention is having an effect on the subordinates because they find out that the company values good relationships among employees—values it enough to invest in training. Knowing that supervisors are being trained has an effect on subordinates directly—it has nothing to do with the behavior of supervisors or the training they received.

- There are no causes related to the intervention that are affecting Y. In other words, we can rule out that the relationship between the intervention and Y is spuriously due to the action of a third (or fourth) variable. This might occur because of something associated with the training that affects subordinates. Suppose the company has limited training resources, and because supervisors are being trained, a subordinate training program was canceled. Subordinates might become aware of the reasons for the diverting of training resources, and decide to be nicer to one another to avoid more loss of resources in the future. The effect on subordinate ostracism was not due to the training affecting supervisor behavior, or due to the effect of that training on subordinates that had nothing to do with supervisors. Rather there was a factor outside of the training that is the causal element.

Even with a randomized experiment, it can be quite challenging to meet the three conditions. The possibility of demand characteristics and experimenter effects (Rosenthal & Rosnow, 2009) is widely known, although often ignored. Blind and double-blind procedures are often used to address such limitations, but they are not always feasible as in many experiments, experimenters know the conditions because they must administer them.

Beyond those problems is the issue of a possible disconnect between the intervention and the X variable. Most studies are interested in making connections between theoretical constructs, such as ostracism and potential antecedents and consequences. Constructs are manipulated via interventions by operationalizing varying levels, and it is assumed that those operationalizations are in fact manipulating the construct of interest. It is not necessarily the case that a manipulated variable in fact reflects the intended theoretical construct, particularly as so many organizational constructs are abstract representations of the social environment.

All this is to say that conclusions about causality are always tentative, and that the best we can do is demonstrate that specific interventions might result in desired results in the workplace. Thus we might find in a causal factor sense that providing certain training to supervisors would be expected to reduce ostracism in employees. This does not mean that the content of the training itself is necessarily the causal factor, as other possibilities exist.

The Study of Process

Although it is not often stated explicitly, most of our research and theories are implicitly concerned with investigating process, that is, the sequence of events that occurs within organizations. With ostracism, this might mean conditions and events at work that might lead one or more employees to ostracize one or more colleagues, and the sequence of events leading from being ostracized to employee and organizational outcomes. Process is implied in models of simple mediation chains suggesting X leads to Y, mediated by one or more other variables. It is implied in more complex structural models. Unfortunately, most of the research designs utilized to test hypotheses and theories about process are unable to provide much insight because they fail to include methods that can reasonably do so (Spector & Meier, 2014).

The idea of a process implies a temporal sequence of conditions or events that unfolds in a particular order. One such order would be that an employee who violates group norms is ostracized by the group, and after being ostracized, that employee feels anxious. This statement specifies how one event leads to another—ostracized employee's behavior to ostracism by other employees to emotional state of the ostracized employee. Processes are generally stated as causal flows, although it is possible that events unfold in a sequence without one event necessarily being a cause of another. In other words an event might be a proxy factor in that it precedes another event in time, although some other factor associated with the proxy factor is the actual cause.

Because processes are concerned with temporal precedence of conditions and events, the time frame in which the process unfolds must be built into research designs. That is, one must be able to demonstrate that the elements of the proposed process occurred in the specified order. This means research methods must be chosen that can assess the various

elements in the sequence in which they occur. This can be readily accomplished when the elements involve discrete events that occur at specific times, such as having an accident or quitting a job. It is more challenging when the variables of interest involve more chronic conditions or levels, such as job characteristics (e.g., skill variety) or job stressors (e.g., role ambiguity). Designs that estimate relationships among such variables are generally unable to shed much light on when the conditions occurred. In such cases it might be possible to show that certain events led to a change in a condition (e.g., ostracism became more frequent). Most studies, even those with longitudinal designs, fail to illuminate the sequence of change.

Spector, Yang, and Zhou (2015) is an example of a longitudinal study that incorporated temporal features to investigate the direction of the connection between violence prevention climate and mistreatment. They chose newly graduated nurses in their first nursing position and assessed them 6 months and 12 months after graduation. Climate and mistreatment (physical and nonphysical) were assessed at both time periods. Analyzing only those individuals who had not experienced mistreatment at Time 1, they were able to show that climate (Time 1) predicted the first mistreatment event the nurses experienced, thus providing evidence for the climate-mistreatment temporal order. To test the reverse order, they conducted a repeated measures analysis of variance to see if those experiencing their first mistreatment event at Time 2 would have larger reduced climate scores than those who did not experience mistreatment. This analysis was able to rule out that direction of effects. This design and analysis strategy required different analyses to test each direction of effects because of the discrete versus continuous nature of the two variables.

Observational Research Designs

There are a wide variety of observational research designs that can be used to study workplace ostracism. These designs involve the collection of data without any sort of intervention or manipulation of variables. These designs vary mainly in two aspects. First, designs can be static and assess all variables at one point in time, or they can have multiple observations over time. Second, they can collect all data from a single source (e.g., employee self-reports) or from multiple sources (e.g., employee and supervisor reports). They can involve only data from surveys, whether completed by employees or others, or they can incorporate other forms and sources of data.

Cross-Sectional Designs

The most basic observational design is the cross-sectional single-source design when all data are collected from a single source, most typically the employee. This design is the most popular in the job stress and occupational health domains in which the study of mistreatment and ostracism inhabit (Spector & Pindek, 2016), although we found with ostracism itself, more studies incorporated a time element. Most studies in this domain are surveys of employees that can be conducted anonymously using online survey hosting platforms like Qualtrics or Survey Monkey. These surveys can be conducted inexpensively, especially if volunteers are solicited as subjects. Having the resources to compensate subjects can make it easier to recruit specialized populations, and increases response rates.

As typically used, the cross-sectional design is limited to establishing covariation among variables, or showing that a particular variable is a correlate as defined by Kraemer et al. (2001). Such designs can be effective in showing links of ostracism with potential antecedents and consequences, and can be used to explore boundary conditions of those links, for example, that they are stronger for certain groups of people versus others. What they cannot indicate, no matter what complex statistics are applied, is that a particular variable might serve as a proxy factor or a causal factor. Reasonable evidence that a variable serves in those roles requires the introduction into the research design of appropriate temporal features. We will return to those issues later when we discuss the issue of studying processes.

The cross-sectional design can be particularly useful in early stages of research when it is important to efficiently establish linkages among variables of interest. It can be used in an exploratory way to determine which variables are interrelated, and it can be used in a confirmatory way to test theory-based hypotheses about relationships, both additive and interactive. Peng and Zeng (2017) used this approach in the first of two studies, as they examined the relationship of workplace ostracism with self-esteem, helping behavior, interpersonal deviance, and the role 360-degree feedback plays in moderating the strength of those relationships.

Once it is established with cross-sectional designs that variables are related, follow-up research can be conducted to rule in or rule out alternative explanations for results. For example, if an ostracism study shows that the more frequently people report ostracism, the more negative affect

they indicate, one might wonder if this relationship is spuriously due to the action of personality, such as neuroticism. A cross-sectional design could be used to see if controlling for a measure of neuroticism will have an impact on the ostracism-negative affect relationship. Finding little difference between analyses controlling versus not controlling for neuroticism helps rule out personality as a confounding variable. Finding that neuroticism can "explain" the relationship between ostracism and affect is inconclusive. The relationship might be spurious, but there might be something more complex going on, such as people who are frequently ostracized are traumatized and become higher in neuroticism. Drawing firm conclusions would require a series of studies using different designs and methodologies to rule in or rule out personality as the driver of ostracism and affect reports.

The cross-sectional design has been much maligned in both the literature and by editors and reviewers in the publication process. Some journals have policies to reject out of hand all submitted manuscripts using this design. Despite the low esteem of the design, it remains the most popular, undoubtedly due to its efficiency and low cost. Critics of the cross-sectional design are often quick to tout the virtues of the longitudinal design that is considered to be a vast improvement. As we will see next, the potential advantages of the longitudinal design are too infrequently realized as they are typically used (Spector, 2019).

Longitudinal Designs

Longitudinal designs involve the repeated assessment of individuals over time through collection of two or more waves of data, and are the most popular design for workplace ostracism research. In many cases all variables in the study are assessed at each wave, but in some cases what is included in each wave varies. Wu, Selig, and Little (2013) distinguish longitudinal from diary designs in terms of the number and timing of waves. Longitudinal designs generally have a handful of waves and a fairly long time frame measured in months or years, whereas diary designs typically have far more measurement occasions over far shorter time frames. A typical diary design might have 2 or more assessments for each of 10 or more days. The diary design will be discussed in a separate section.

The potential advantage of the longitudinal design is the ability to demonstrate that one variable can predict a future variable, or is a proxy factor. However, the ability to demonstrate temporal flow, that is, one

variable can predict the other, is not automatic with this design, and depends on the ability to determine when things occurred in relation to one another (Spector, 2019). Most applications of longitudinal designs in the organizational realm fail to include features that would allow for the determination of temporal precedence, and this is true in the workplace ostracism domain, as well. This is because the starting time of the study and the lag between waves are chosen arbitrarily, after many causal processes have achieved steady state, or what Mitchell and James (2001) refer to as equilibration. In the second study published in the aforementioned article, Peng and Zeng (2017) measured ostracism and other variables at two time points one month apart. There is nothing in this study to suggest that a significant event occurred during this time frame that would have led to ostracism or its effects.

To determine causes or effects of ostracism, temporal precedence must be incorporated into the design. Suppose a study were interested in the connection between frequency of ostracism and job satisfaction. The ideal design would be to assess job satisfaction before and after ostracism began occurring to see if those who became ostracized for the first time suffered a reduction in job satisfaction, and those who were not ostracized maintained their level of satisfaction. Finding a difference in job satisfaction from before ostracism occurred until after it happened would establish that ostracism is at least a proxy factor. It can predict change in job satisfaction. It is not a causal factor because we cannot know from just the assessment of the two variables if there is another factor related to ostracism that is the real driver of job satisfaction. For example, perhaps individuals who perform poorly are ostracized by coworkers for not pulling their weight, but fail to enjoy rewards such as bonus pay due to their inadequate productivity. It might well be that the lack of rewards is the driver of job satisfaction. Thus, the ostracism—job satisfaction relationship could be spurious.

However, once the process connecting ostracism to job satisfaction has been completed, assessing both variables at two arbitrary points in time can only establish that they are correlates. It cannot shed much light on whether ostracism leads to job dissatisfaction or the reverse. The use of the longitudinal design does not offer much advantage over the cross-sectional design in this instance.

The ideal way to utilize a longitudinal design is to assess a potential predictor at a meaningful Time 1 before the potential outcome has occurred. The lag before Time 2 assessment would be chosen to follow

the occurrence of the outcome so that it could be determined if the proposed predictor could forecast the future outcome. This can most readily be done when the outcome is a discrete event, such as quitting the job. Another strategy would be to study newly hired employees so that a predictors can be gathered prior to or shortly after hiring but before the outcome has occurred (for an example see Schonfeld, 2001). As noted earlier, Spector et al. (2015) utilized this approach when assessing violence prevention climate in a sample of newly graduated nurses who had not yet been assaulted, subsequently finding that climate was a proxy factor in predicting subsequent mistreatment and physical assault. This approach could be used with predictors of ostracism if newly hired employees who had not yet been ostracized were studied. Potential predictors could be assessed at Time 1 early in the employees' tenure in a sample who had not yet experienced ostracism, and ostracism could be assessed at a later wave.

Longitudinal designs are most typically used with traditional summated rating scales completed by employees about their experience with ostracism. One novel approach used in recent work (Yang & Treadway, 2018) was to examine both targets' perceptions of workplace ostracism and their behaviors as a perpetrator of ostracism at two time points three months apart using a social network-type measure (i.e., they asked each individual how often they ostracized each person in their department).

Diary Designs

With the typical diary design, individuals complete assessments multiple times over fairly short periods of time. Most diary studies survey respondents on consecutive work days, often more than once per day. Some studies use fixed times to conduct the survey, such as before work, at lunch (or meal) break, and the end of work, and before bed. For example, Pereira, Meier, and Elfering (2013) investigated the impact of workplace ostracism (measured at the end of the work shift) on worrying (measured before bed) and sleep quality (measured the following morning). Other studies might ask respondents to complete a survey when a certain event occurs (event sampling), such as when a customer is rude. The time frame for these studies is not fixed, as weekly or monthly lags could be chosen.

Diary designs are typically used to assess within-person phenomena. With ostracism they could be used to see if on days a person experiences some form of ostracism (e.g., coworkers went to lunch and didn't

invite the target person), the outcomes are different than on days when ostracism did not occur. The advantage of studying within-person effects is that many person-level variables are controlled, since analysis is being done of variability within and not between people. The within-person approach can also be more directly tied to many theories that suggest the effects of organizational experiences, like ostracism, might be immediate and transitory, so that on days the experience happens, outcomes are different than on days when they did not, or conversely, on days that certain events happened, ostracism was more likely to occur.

Although diary designs can indicate an association between a particular experience and outcome, the direction of effects is not always clear. This is because in most cases respondents are asked for retrospective reports of events and experiences such as ostracism, and for outcomes, but the time frame by which these occurred is not captured. For example, one might ask at the end of the workday about ostracism and current mood. Even though the event happened prior to the assessment, and mood is current, this method does not indicate when that mood occurred relative to the ostracism event. Mood might have been assessed after the event, but that does not mean that it began after the event. It is possible that mood drove the ostracism rather than the reverse. Even if a pretest of mood is taken at the beginning of the shift, it still cannot tell us direction of effects because even if mood changes from beginning to end of the shift, we cannot determine if it changed before or after the event of interest. All we can determine is that mood is worse at the end of the day (or changed for the worse) on days certain events occurred. Determining direction of effects would require knowing when mood changed in relation to the ostracism event.

The diary design can also be used to shed light on proxy factors, that is, whether something that occurred at the beginning of the workday could predict an event that happened subsequently. For example, one could ask for reports of how well the person slept the prior night at the beginning of the day to see if it could predict whether or not an ostracism event occurred, assessed at the end of the day. Finding that connection could establish sleep quality as a predictor, but that does not mean that sleep quality was the causal factor. It could be that a third variable might have driven poor sleep and then ostracism. For example, suppose employees who have conflicts with others on day 1 are likely to sleep poorly that night, and are likely to be ostracized by other employees the next day. Disentangling this sort of complex series of events would be difficult with the sorts of methods typically used.

Multiple Data Sources

A concern with studies that use a single source of data such as self-reports is the possibility that relationships among variables are distorted due to common biases or common method variance (Podsakoff, MacKenzie, & Podsakoff, 2012; Spector, Rosen, Richardson, Williams, & Johnson, 2019). For example, it is possible that individuals with certain personality characteristics or people in certain moods are likely to distort their reports of ostracism and other variables within the same survey. One way to control for potential confounding with a survey (or any single data source) is to utilize more than one data source to minimize, although not entirely eliminate (Spector, 1994), this possibility. As we noted, this is a popular strategy in the study of workplace ostracism. Some of these studies surveyed employees and their supervisors about the employees' ostracism experiences and potential antecedents (Quade, Greenbaum, & Petrenko, 2017) and consequences (Xu, Huang, & Robinson, 2017).

With survey research, alternative sources are typically people related to the target employee who complete parallel surveys. Depending upon the purpose of the study, those individuals might be organizational insiders (coworkers, subordinates, or supervisors) or outsiders (customers or significant others). They might be asked to provide data on the ostracism experiences of the employee, or on potential antecedents (e.g., working conditions) or outcomes (e.g., person's affective state). In some cases, the alternative source might complete the same scale as the target employee to show that relationships of ostracism with other variables are not just due to common method variance.

One advantage of using alternative sources is the potential control of method variance and the ability to get convergent validity evidence for self-reports. The main weakness is that alternative sources typically have only limited information upon which to base judgments. Given the passive nature of most ostracism behaviors, they can be difficult to observe. A coworker or supervisor, for example, will not have complete knowledge about all the instances of ostracism the target employee might have experienced. Thus these alternative sources should be considered rough indicators that are likely less accurate than self-reports (Frese & Zapf, 1988).

Most multi-source studies are single-level with the unit of analysis being the employee, even though data are provided by two sources. We located one study that was multi-level with multiple employees nested within supervisors (Liu, Li, Bruk Lee, & Ma, 2019). Employees and supervisors provided data on different variables so that the experiences of employees and supervisors can be considered jointly.

Alternative sources of data do not have to come from surveys. Depending upon the variable of interest, there might be a number of other types of measures to use. Some might be available from organization records, for example, absenteeism or turnover. Others might be physiological measures, such as blood pressure or heart rate. Some organizational variables might be assessed objectively, such as organization size or structure. Financial performance of individual units might be tied to levels of ostracism. The use of a variety of data sources can expand the sorts of questions that are addressed, and can provide additional confidence in conclusions when results converge across sources.

Designs to More Directly Address Process

The traditional designs that rely on survey methodology are valuable tools for establishing correlation, sometimes proxy factors, and in rare cases causal factors. There are other methods, however, that need more extensive use in order to shed light on the processes underlying ostracism and its effects. They include archival studies, direct observations, experiments, qualitative studies, retrospective event histories, and sequence analysis (Spector & Meier, 2014) that enable the researcher to more closely identify the time frame by which a phenomenon unfolds.

Intervention Studies

To say we need intervention studies in the published literature is quite cliché because it is a suggestion frequently made, but rarely followed. The reasons for this are certainly complex, but publishing intervention studies is not currently in favor. We found only a single workplace ostracism intervention study (Ramsey & Jones, 2015) that investigated the efficacy of a mindfulness exercise in reducing ostracism behaviors in those trained. This intervention involved a series of discussions about experiences of workplace stress and mistreatment including ostracism, and then mindfulness exercises to deal with those experiences. It included meditation sessions to be performed at home. It is unfortunate that there aren't more intervention studies as they come closest to the manipulationist ideal for drawing causal inferences. With such studies researchers

can create interventions in order to produce certain conditions or events, and then follow-up to see the effects on the target and potential organizational outcomes. Although no single intervention study would be conclusive, such studies can provide evidence that manipulating a potential antecedent could have the desired effect. Even if we cannot be certain why the intervention had the effects that it did, such research has practical utility in providing potential solutions to organizational problems.

For example, if the goal of an intervention is reducing ostracism, that intervention might focus on potential drivers of ostracism, for example, poor performance of targets. An intervention could be devised to help raise performance of struggling employees which would be expected to reduce ostracism. Such an intervention might be individualized and involve feedback, mentoring, and training. A pretest-posttest design could be used to show that the intervention did in fact raise performance. At the same time the study could determine if ostracism was reduced from before to after intervention. Of course, an even stronger design would involve a control group that did not receive the intervention, and random assignment to intervention or control conditions would be ideal.

Retrospective Event Histories

Most contemporary research studies typically ask people to rate levels of conditions or incidence frequencies. With ostracism this could mean asking employees to rate how often they are the targets of ostracism behaviors by coworkers, the frequency with which they experience certain emotions, and their current levels of job satisfaction. These studies fail to fully capture the range of data that employees can provide about their experiences and organizations. A retrospective event history (Tuma & Hannan, 1984) asks respondents to recall a series of events, and recall them in order, generally by providing dates. This can be done in an interview during which respondents recall events in order. Events can be discrete instances, for example, of specific ostracism experiences within a particular job, or they could involve a person's work history, indicating in which jobs ostracism occurred or did not occur. Event histories can also rely on archival data, such as organizational records of mistreatment complaints.

One example in the organizational realm was conducted by Glick, Huber, Miller, Doty, and Sutcliffe (1990) who interviewed a group of key informants four times at 6 month intervals. The repeated interviews

allowed them to ask informants about the consequences of events asked in prior periods. Although this and other such studies are subject to limitations of human cognition and memory, it is not clear that such data are necessarily less accurate than the typical survey data that are collected.

Qualitative Studies

Qualitative studies can be used to investigate specific ostracism events and experiences that can provide far more depth than is possible with quantitative methods. There are a variety of such methods that can be useful. Some involve employees as informants who can relate experiences with ostracism in their careers or in their current jobs. This can be accomplished through interviews or open-ended surveys. Individuals can be asked about general experiences, or they can be asked to relate the most memorable or most recent incident. This approach is very much like the Stress Incident Record (Keenan & Newton, 1985) that has been used to study stressful work incidents.

When interview or written material is collected, there are two general approaches for analysis. First, the researcher can read the materials and write an analysis based on themes that are noted. Various quotes can be pulled out to illustrate each of the themes. Second, the researcher can conduct a content analysis in which materials are placed into categories, typically mutually exclusive. When there are relatively few respondents, typically the case with interviews, each statement might be placed into a category. Often with open-ended questionnaires there are 100 or more respondents, so that each person's response might be placed into a category. This is likely the case when critical incidents are collected that reflect the topic of interest, such as instances of being ostracized, or instances of ostracizing someone else. Content analysis can be conducted manually through the use of two or more trained raters. It can also be automated and conducted through software that can perform text analysis. An example of a qualitative ostracism study is Waldeck, Tyndall, and Chmiel (2015) who conducted a thematic analysis of semi-structured interviews with 21 participants who reported how they processed and coped with workplace ostracism.

Other approaches are possible, such as ethnographies where the researcher is a participant observer who spends time in an organization and records observations of events. This might involve the researcher spending a week or more in an organization during which he or she

can interact with employees during the work day. The researcher would interpret and synthesize what was observed and reach conclusions. Such a study of ostracism, for example, would allow the researcher to detail how employees interacted with one another, and how certain individual were socially excluded from certain activities. This sort of study could provide a rich context by which to understand how an individual might be the target, and how different individuals explained their interactions with various members of their work groups.

Building Better Research Programs

As noted by Spector and Meier (2014), the methods utilized in too much of our research are driven more by convention than by what might best answer our research questions. There is much we do not know about the antecedents, consequences, and boundary conditions of ostracism and other forms of workplace mistreatment. Many of our questions cannot be readily answered with the typical methods that are applied. Too much of our research relies on observational methods that can provide important insights about what relates to ostracism, but not many insights about the processes surrounding ostracism. For example, longitudinal studies are most likely to choose arbitrary time points in an attempt to shed light on variables that might occur prior to or subsequent to ostracism. Those research designs, however, are not very helpful when we want to learn how it is that a person becomes targeted, and how interaction patterns might evolve over time.

A better approach is to think in terms of programs of research, both within research teams and across research teams throughout the field, rather than individual studies. Such programs should involve a diverse set of methods that can, in combination, provide more insights than studies or series of studies that rely on a single approach. This should include qualitative methods to provide a richer view of ostracism at work, and quantitative studies that can investigate relationships. More attention should be paid to events rather than to levels of conditions. Many of our models are really models of individual incidents, yet most studies focus on relative frequencies, that is, employee estimated frequency of ostracism might be related to their reported frequency of negative emotions or physical symptoms.

When relationships are found between two variables in a study, immediate follow-up studies should be conducted to better understand why

that relationship was found and what possible boundary conditions might exist. If ostracism is related to an outcome in a self-report study, is it possible that the outcome drove the ostracism? Did the reports of both variables suffer from shared biases and common method variance? Is the relationship moderated by individual differences, or by contextual factors in the workplace? These are the sorts of questions that should be addressed before assuming that the observed relationship means that ostracism drives outcomes.

A programmatic approach can also address the three forms of inference. Cross-sectional and longitudinal designs with arbitrary time frames can be helpful in establishing correlates. Longitudinal designs in which potential antecedents are assessed prior to their presumed outcomes can establish proxy factors. Interventions, whether created by the investigator or naturally occurring, will be needed to shed light on causal factors. Programs can be designed to systematically address these questions in order.

The study of workplace ostracism and broader mistreatment is relatively new, but it has provided important insights into how this phenomenon can be harmful to individuals and organizations. To this point, a relatively narrow range of methodologies have been used to study workplace ostracism, leaving much to be done to more definitely build our understanding of workplace conditions that might lead to or prevent this behavior. Of particular value would be the application of methods that can more definitively indicate the temporal order in which workplace events, including ostracism, occur. Ostracism can be potentially damaging to employees and their organizations, so a better understanding of this phenomenon would provide insights into how best to manage it at work.

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Appendix

See Tables A.1, A.2, A.3, A.4, A.5, and A.6.

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