

*Justice at the Workplace**A Review*

MARIANNA VIRTANEN and MARKO ELOVAINIO

Abstract: Modern work life is characterized by constant change, reorganizations, and requirements of efficiency, which make the distribution of resources and obligations, as well as justice in decisionmaking, highly important. In the work life context, it is a question not only of distributing resources and obligations, but also of the procedures and rules that guide the decisionmaking in the organization. Studies of these rules and procedures have provided the basis for a new line of research that evaluates leadership and social relationships in working communities; that is, distributive, procedural, and relational justice. This review follows the development of research on organizational justice from its origins in early social and motivational psychological theories to its establishment as a major line of research in modern work and organizational psychology. The adverse consequences of injustice include poor team climate, reduced productivity and well-being, and work-related illnesses.

Keywords: psychosocial; organizational justice; health; productivity; review

Introduction

Compared with many other disciplines, the research on organizational justice is relatively young. The “prehistoric” phase was dominated by classic theories of social psychology and motivational psychology, such as John Dollard and Neal Miller’s frustration aggression hypothesis (1939),¹ Abraham Maslow’s hierarchy of needs (1943),² Fritz Heider’s balance theory (1946, 1958),^{3, 4} and Leon Festinger’s theory of cognitive dissonance (1957).⁵ *The Theory of Relative Deprivation*, developed by United States sociologist Samuel Stouffer after the Second World War (1949),⁶ is usually considered the first real justice theory. It suggests that employees’ satisfaction with rewards, such as salary or status, is not dependent on only their absolute level but also on how employees compare their rewards with those of others.

Another United States sociologist, George Homans, developed the theory of relative deprivation toward a more general theory of social exchange in his article “Social behavior as exchange,” published in the *American Journal of Sociology* in 1958.⁷ According to Homans, social interaction between human beings is a form of social exchange or a series of exchanges, by which different types of expectations and rules are developed in human communities. These expectations include, for example, reciprocity, understanding of modesty and equity, and the relationships between inputs and outputs. The stronger the formation of these rules in human communities, the more they become normative moral rules, even though they are often unofficial and unwritten. These social rules have been seen as prerequisites or basic characteristics of human communities. The more recent theories of *social capital*⁸ are based on these concepts. Homans was also among the first theorists to

This study was supported by the Academy of Finland (265977, 292824, 258598).

consider humans as highly sensitive to inequalities in normative trade. Thus, people experience an imbalance between their input and the outputs they feel they deserve, as unfair. Homans was the first scholar to introduce the concept of *distributive justice*, and stated that perceived injustice leads people to try to restore balance. However, he did not specifically describe the means that people use to accomplish it.

The next author to further develop Homans's theory was Peter M. Blau, in his book *Exchange and Power in Social Life* (1964).⁹ According to Blau, people's satisfaction with their social exchange is determined by the benefits they receive in relation to the expectations they had of these exchanges. Expectations develop not only through personal experience, but also when people compare their benefits to those of their counterparts. The benefits received by people with whom one wishes to identify, or with whom one has identified, are especially significant. Blau divided these expectations into *general* and *particular expectations*. General expectations are expectations of the norms and values of society as a whole, whereas particular expectations are those that people have of specific exchange relationships. These particular expectations are thus related to, for example, family members, or supervisors or colleagues at the workplace. They focus not only on the expected benefits in relation to invested inputs, but also on the rules that control the whole social interaction or social exchange. These particular expectations linked, for the first time, justice to work organizations and relationships between employees and managers. Blau further distributed exchange into two areas: social and economic. In terms of modern justice theories, the more interesting concept of these two is the concept of social exchange, which is formed by a strong, but not easily managed, tapestry of expectations and obligations that lead to human interaction. Expectations concern immaterial rather than material things, such as kindness, acknowledging other people's feelings, and respect. According to Blau, maintaining social interaction is largely dependent on how *trust* is developed, which, in turn, is dependent on how expectations are realised in the long run.

How Justice Rose to the Center of Organizational Psychology

The first theory to have a major impact on organizational psychology originated in the 1960s and is still valid today. It is known as the equity theory by United States psychologist John Stacy Adams.¹⁰ According to Adams, there is a strong motivational drive toward equity, and he himself considered the theory a motivational theory. Adams also distilled *exchange balance* as a core unit of exchange, and for the first time, he also described the consequences of a shaken balance. In a situation in which rewards are greater than investments, an employee feels guilty, and as a consequence, increases investments. Alternatively, the investments can be revalued as more highly valuable than previously, which is another way of reaching the balance between inputs and outputs. In another scenario, in which rewards are lower than investments, the consequence is dissatisfaction and a reduction of investments and work efforts.

Adams, in line with Homans, stated that people define their own balance to a large degree by comparing their rewards and investments with those of certain reference people; that is, those who are in the same position in the occupational hierarchy, or with those rewards that they received in their previous work. Adams's theory and ideas were strongly based on classical social psychological theories. In his view,

the motivating power behind human behavior is striving toward balance in all spheres of life. Imbalance means psychological strain, which in one way or another must be resolved to prevent constant negative load. Even though the focus in Adams's theory was on behavior, it formed a basis for later research as to how justice at work might affect health, by defining the central stress mechanisms that are linked to long-term imbalance. Later, the concept of *allostatic load* was introduced and defined as a state of psychological stress, which is opposite to homeostasis (i.e., balance), and a long-term consequence of losing homeostasis. It has been suggested that allostatic load is a major mechanism explaining the effect of psychological stress on health.^{11, 12}

The final impulse to justice research in social and organizational psychology came from two parallel research groups at the beginning of the 1970s. These groups shifted their focus to the fairness of procedures according to which resources are distributed. Morton Deutsch¹³ and Gerald S. Leventhal¹⁴ divided justice into a more traditional framework of different groups, whereas John Thibaut and Laurens Walker¹⁵ investigated the rules that directed fair decisionmaking in judiciary procedures and trials. Both Deutsch and Leventhal aimed to study the rules that directed decisionmaking. Leventhal in particular classified rules that were perceived as fair and were used in order to impact people in work communities. However, Deutsch and Leventhal viewed different concrete decisionmaking situations that were much more complex than their predecessors, and emphasized compromises, which were required in most of those situations. Because of this complexity, it is also difficult to stick to only one rule at a time. In 1975, Thibaut and Walker published their classic study¹⁶ that compared judicial customs in Europe and the United States. They divided the customs according to the main principle of decisionmaking that, in turn, was based on the power that the decisionmaker has over the different phases of the process. These two principles were: (1) general power over decisionmaking and (2) power over knowledge on which the decisions are based. They observed that a legal procedure in which the convict had a say was more often perceived as fair, although objectively, the decisions were the same. Thus, they introduced *voice-effect* to the justice literature, which means that the perception of justice is strongly affected by the possibility of people being heard or having control over the information that is used for decisionmaking. The above-described research had a strong impact on how procedural justice was defined in the work organizational context. By the 1990s,¹⁷ the concept of procedural justice in the work organizations included the following seven principles:

Procedures in the work organization are designed to:

- collect the accurate information necessary for making decisions
- provide opportunities to appeal or challenge decisions
- have all who are affected by the decision represented
- generate standards so that decisions can be made with consistency
- hear the concerns of all those affected by a decision
- provide useful feedback on decisions and their implementation
- allow requests for clarification or additional information regarding the decision

These principles are the core rules that define procedural justice. In the following paragraph, we introduce other concepts that have been developed to describe organizational justice.

Core Concepts of Organizational Justice

In organizational psychology, theories of justice have been based on two established concepts: (1) *distributive justice*; that is, employees' perception of justice in rewards and benefits at work, largely according to Adams's work,¹⁸ and (2) *procedural justice*; that is, employees' perception of fairness in the principles and processes that lead to decisionmaking and the distribution of rewards and benefits.^{19, 20, 21, 22} Already during the 1970s, the focus of research had shifted from distributive to procedural justice. The reason for the unparalleled interest in procedural justice was probably the observation of several studies, that suggested that people do not only react to the amount of reward but also to separate aspects of the decisionmaking process itself; for example, the relationship among different benefits, the question of whether all parties are equally treated during the decisionmaking process, whether rules are consistent, whether all parties are informed, and whether assessment is unbiased.²³

Researchers spent the whole of the 1980s and 1990s examining whether people could differentiate distributive justice from procedural justice, which one more strongly affected their perception of justice, and how much each component could compensate for the other. For example, researchers investigated whether people were satisfied with an unfair distribution of benefits for themselves if the rules behind the decisionmaking were perceived as fair, and vice versa. Justice was further defined with increasing delicacy. In 1986, United States organizational psychologists Robert J Bies and Joseph Moag²⁴ presented a new form of justice, *relational (or interactional) justice*, which deviated from distributive and procedural justice. They claimed that people are sensitive to the ways in which they are treated during the decisionmaking process. People expect courteous, friendly, and respectful treatment from their managers even when decisions are negative or undesirable. To date, the concept of *organizational justice* includes three core components: distributive, procedural, and relational justice. However, 15 years ago, heated debates arose about the structure and components of this concept. Some researchers, such as Jason A. Colquitt,²⁵ suggested that relational justice can be divided into two dimensions: *informative justice*, the extent to which information processes are fair in the organization, especially when implementing big decisions, and *interpersonal justice*, which reflects whether employees perceive their treatment as respectful and appropriate.

For a relatively long period of time, justice research was dominated by decisionmaking and management in work organizations. In the 1990s, the focus began to diverge into three different lines: the motivational factors behind justice processes, perception and cognitive processes, and the consequences of injustice. The United States tradition concentrated on motivational factors, and in particular, the contribution of two basic motivational drives—benefit and identification—to justice perception. The *benefit hypothesis* postulates that the driving force is self-interest in relation to individuals' input,²⁶ whereas the *identification hypothesis* views social relationships and identification as major contributors to justice perception.²⁷ Cognitive processes and perception were examined using various comparative study processes and alternative visualization perception techniques (see, e.g., Robert Folger's *referent cognitions theory*²⁸). These visualizations are largely people's internalized experiences of social exchange, which they use when comparing procedures concerning and treatment of themselves, to those procedures concerning

and treatment of other people. These ideas can be viewed as a direct continuum of Samuel Stouffer's (1949)²⁹ theory of relative deprivation.

The first classical articles were published at the turn of the 1980s (e.g., Thibaut and Walker³⁰ and Leventhal³¹), and the first broader review book, *The Social Psychology of Procedural Justice*, was written by Allan E. Lind and Tom R Tyler in 1988.³² The book introduced the background of justice literature and empirical evidence up to that date. However, justice as a psychosocial concept in work life did not fully emerge until the beginning of the 2000s when several reviews were published,^{33,34} and when the topic was accepted for the first time in the highly regarded *Annual Review of Psychology* in 2001, in an article authored by Dale T. Miller.³⁵ *The Handbook of Organizational Justice*³⁶ by Jerald Greenberg and Jason A. Colquitt was published in 2005, and this concentrated for the first time exclusively on organizational justice. Justice in work life has become established as an important research area, with several new reviews published recently.^{37,38}

Consequences of Injustice at the Workplace

Since the late 1990s, research on the consequences of injustice at the workplace has been dominated by United States and European studies. The widest and longest research tradition has focused on the relationship between justice and productivity,^{39, 40} that has usually been defined as work performance, proactive *citizenship behavior*, and harm behaviour, such as unjustified absence. Distributive justice, procedural justice and relational justice have all been associated with worker productivity, as defined previously.^{41, 42} A link has also been observed to commitment to work and turnover,^{43, 44, 45} job satisfaction,⁴⁶ and perceived work stress.⁴⁷

Traditionally, work and organizational psychology have not focused on the association between justice and employee health. This research line was first initiated by Finnish researchers, and today the other Nordic countries, the United Kingdom, and Central Europe also have active researchers. As previously mentioned, stress theories had a strong theoretical basis (e.g., Bruce McEwen's *Theory of Allostatic Load*, 1998),⁴⁸ that suggested a relationship between injustice perceptions and health outcomes. The first epidemiologic study examined justice perceptions and stress among personnel in primary healthcare centers in Finland and was published in the *Journal of Applied Psychology* by one of the authors of this article, Marko Elovainio, and his colleagues.⁴⁹ This study was followed by another, with the title *Organizational Justice, a New Psychosocial Predictor of Health*, that for the first time focused on health outcomes such as mental health and sickness absence.⁵⁰ The risk of medically certified sickness absence was 15 percent to 35 percent lower among employees who perceived fair management at their workplaces. Later studies have shown associations with diagnoses of anxiety and depressive disorders as reasons for sickness absence.⁵¹ A systematic review supported the hypothesized link between perceived injustice at work and mental disorders and symptoms of mental ill health.⁵² Studies on mental health have primarily examined procedural and relational justice; distributive justice to a lesser extent. A recent review summarized six previous review studies on work-related psychosocial factors and cardiovascular diseases.⁵³ Only one review analyzed studies on justice and cardiovascular diseases,⁵⁴ reporting only two single observational studies on this association, which both found an association between perceived injustice and the incidence of cardiovascular disease.^{55,56} Since then, one

more review has been published.⁵⁷ This review found three studies on organizational justice. A Swedish study examined the quality of leadership—with some components of justice included—and found an association between poor leadership and heart disease.⁵⁸ There is also evidence of an association between perceived injustice and vascular dysfunction,⁵⁹ metabolic syndrome⁶⁰ and inflammatory markers among men,⁶¹ sleep disturbances,^{62,63} cognitive dysfunction,⁶⁴ and unhealthy behaviors such as risky alcohol use⁶⁵ and smoking intensity, that is, the number of cigarettes smoked.⁶⁶ Some studies have tested a hypothesis suggesting that justice in decisionmaking is particularly important during times of organizational change and insecurity.^{67,68} However, even though justice and health have been actively studied during the past two decades, there is still a need for a stronger evidence base from large-scale studies and meta-analyses that sum up and quantify the research evidence.

The fundamental question is: Why is justice so important to employee well-being and health? When seeking answers, the theory of social exchange has become the leading theoretical framework and has received substantial support.⁶⁹ The core concept of social exchange, *trust*, acts as a mediating mechanism between justice and its effects; trust reduces insecurity and maintains reciprocity.^{70,71,72} However, in their recent meta-analysis, Colquitt and his group⁷³ found more consistent support for *emotions* as mediating mechanisms. According to this viewpoint, perceived justice evokes strong positive emotions, such as enthusiasm and pride, whereas experiences of injustice evoke strong negative emotions, such as anger, anxiety, and guilt. Daniel Skarlicki and Robert Folger⁷⁴ had already observed in their classic work in 1997 that injustice experienced at the workplace leads to retaliation, such as the damaging of tools or work processes, verbal assaults on managers, stealing from the workplace, unjustified absence, doing private business during working hours, and smearing one's employer's reputation to people outside the company. Today, a combination of the social exchange theory and emotion viewpoint is believed to be a useful approach when aiming to proceed in organizational justice research and theory.⁷⁵

Justice as a Shared Experience in Work Communities

Because work activities are increasingly performed in teams and work communities, research relying on individual experiences of justice is limited.⁷⁶ Decisionmaking and processes are targeted at groups, and it is suggested that the experience of justice is socially constructed. Therefore, the most recent research line investigates organizational justice as a collective, shared experience in work communities.⁷⁷ These studies are based on several theoretical frameworks, for example, the *attraction–selection–attrition* theory,⁷⁸ which postulates that the members of work communities metamorphose into a uniform group in their perceptions and understanding of justice over time. This is because deviating people leave the group. *Social information processing* and *fairness heuristic* theories suggest that employees in working groups seek signs of justice, especially in insecure and unclear situations, and discuss and share information in order to finally form a uniform interpretation.^{79,80,81} Evidence of the shared perception of organizational justice climate has accumulated over the past decade, and Daniel Whitman et al.'s systematic review and meta-analysis in 2012⁸² was probably the first on this topic. It was shown that of the shared organizational justice climate perceptions, distributive justice was most

strongly associated with work unit performance (e.g., productivity and customer satisfaction), whereas relational justice was most strongly related to working unit processes, such as commitment to the workplace and cohesion in the working unit. Few studies have thus far focused on employee health. They showed that working unit procedural justice was associated with a lower prevalence of depression and anxiety among employees.^{83,84}

Justice as a shared perception in school workplaces was the focus of two Finnish studies.^{85,86} Data on secondary school personnel perceptions of procedural and relational justice were linked to a student health and well-being survey. The results revealed that being heard at school was a shared experience among school personnel and students; in schools where the personnel reported low opportunities to be heard, the students reported similar problems in their survey.⁸⁷ Low levels of procedural justice among the personnel were associated with students' dissatisfaction with school, and low levels of relational justice were associated with poorer performance, as well as psychosomatic and depressive symptoms among students. Each form of injustice reported by school personnel was associated with students' truancy.⁸⁸

A similar work unit approach was applied in a study on the prevalence of hospital-acquired infections among patients in Finnish hospitals.⁸⁹ Mean values of personnel surveys on management and team climate in each hospital ward were calculated and linked to patient data, including information on hospital-acquired infection. After adjustment for patient and ward characteristics, poor trust and injustice in the distribution of work tasks were associated with a twofold higher prevalence of hospital infections among patients. This finding was explained by the known fact that poor leadership and trust can lead to increased stress and indifference among staff who probably do not have enough resources to commit to the most important principles of infection control, such as hand hygiene.

Further studies on the association between organizational justice and patient outcomes were conducted in Finland and the United Kingdom. In Finland, high procedural justice in primary healthcare centers was associated with better glucose balance among patients with diabetes⁹⁰ whereas in the United Kingdom, procedural justice was associated with better commitment to treatment guidelines and better treatment, such as more frequent blood pressure and glucose measurements, as well as counseling for weight control and self-treatment.⁹¹

Organizational justice may thus have widespread impacts beyond the employees and working units. These impacts might relate to the quality of work, and and to customers, students, or patients. Even though the analyses of working units seem promising, Whitman and his colleagues⁹² acknowledge that a shared perception is based on a bilateral relationship between employees and their managers. Therefore, there is no need to make a value judgement that separates individual and group experiences of justice; instead they can be seen as research lines that complement each other.

Concluding Remarks

Developing justice at the workplace is a relevant target, because changing decisionmaking procedures, information, and the ways in which people are treated does not increase financial costs but can lead to many positive outcomes. Even though social relationships among people are complex, the basic principles remain

the same. Because people are capable of and sensitive to registering violations of justice in rules that direct social interaction, and because these violations may have various adverse effects, fair procedures, information sharing, and treatment at the workplaces are worth considering.

Notes

1. Dollard J, Doob LW, Miller NE, Mowrer OH, Sears RR. *Frustration and aggression*. New Haven: Yale University Press; 1939.
2. Maslow AH. A theory of human motivation. *Psychological Review* 1943;50:370–96.
3. Heider F. Attitudes and cognitive organization. *Journal of Psychology* 1946;21:107–12.
4. Heider F. *The Psychology of Interpersonal Relations*. New York: Wiley; 1958.
5. Festinger L. *A Theory of Cognitive Dissonance*. Stanford, CA: Stanford University Press; 1957.
6. Stouffer SA, Suchman EA, DeVinney LC, Star SA, Williams Jr. RM. *Studies in Social Psychology in World War II: The American Soldier. Vol. 1, Adjustment During Army Life*. USA: Princeton: Princeton University Press; 1949.
7. Homans GC. Social behavior as exchange. *American Journal of Sociology* 1958;63:597–606.
8. Kawachi I, Takao S, Subramanian SV. *Global Perspectives on Social Capital and Health*. New York: Springer; 2013.
9. Blau PM. *Exchange and Power in Social Life*. New York: Wiley; 1964.
10. Adams JS. Inequity in Social Exchange. In: Berkowitz L, ed. *Advances in Experimental Social Psychology*. New York: Academic Press.; 1965:267–99.
11. McEwen BS. Protective and damaging effects of stress mediators. *New England Journal of Medicine* 1998;338:171–9.
12. Brotman DJ, Golden SH, Wittstein IS. The cardiovascular toll of stress. *Lancet* 2007;370:1089–100.
13. Deutsch M. *The Resolution of Conflict: Constructive and Destructive Processes*. New Haven: Yale University Press; 1973.
14. Leventhal GS. The distribution of rewards and resources in groups and organizations. In: Berkowitz L, Walster W, eds. *Advances in Experimental Social Psychology*. New York: Academic Press; 1976.
15. Thibaut JW, Walker L. *Procedural Justice: A Psychological Analysis*. Hillsdale: Erlbaum; 1975.
16. See note 15, Thibaut, Walker 1975.
17. Moorman RH. Relationship between organizational justice and organizational citizenship behaviors: Do fairness perceptions influence employee citizenship? *Journal of Applied Psychology* 1991;76:845–55.
18. See note 10, Adams 1965.
19. Greenberg J. Organizational justice: Yesterday, today, and tomorrow. *Journal of Management* 1990; 16:399–432.
20. Lind EA, Tyler TR. *The Social Psychology of Procedural Justice*. New York: Plenum; 1988.
21. Leventhal GS. What should be done with equity theory? In: Gergen KJ, Greenberg MS, Willis RH, eds. *Social Exchanges: Advances in Theory and Research*. New York: Plenum; 1980:27–55.
22. Bies RJ, Moag JF. Interactional justice: Communication criteria of fairness. In: Lewicki RJ, Sheppard BH, Bazerman MH, eds. *Research in Negotiations in Organizations*. Greenwich, CT: JAI Press; 1986.
23. See note 21, Leventhal 1980.
24. See note 22 Bies, Moag 1986.
25. Colquitt JA. On the dimensionality of organizational justice: A construct validation of a measure. *Journal of Applied Psychology* 2001;86:386–400.
26. Brockner J, Fishman AY, Reb J, Goldman B, Spiegel S, Garden C. Procedural fairness, outcome favorability, and judgments of an authority's responsibility. *Journal of Applied Psychology* 2007;92: 1657–71.
27. See note 20, Lind, Tyler 1988.
28. Folger R. A referent cognitions theory of relative deprivation. In: Olson JM, Herman CP, Zanna MP, eds. *Relative Deprivation and Social Comparison: The Ontario Symposium, Volume 4*. New York and London: Psychology Press; 1986.
29. See note 6, Stouffer et al. 1949.
30. See note 15, Thibaut, Walker 1975.
31. See note 21, Leventhal 1980.
32. See note 20, Lind, Tyler 1988.
33. Colquitt JA, Conlon DE, Wesson MJ, Porter CO, Ng KY. Justice at the millennium: A meta-analytic review of 25 years of organizational justice research. *Journal of Applied Psychology* 2001;86:425–45.

34. Cropanzano R, Byrne ZS, Bobocel DR, Rupp DR. Moral virtues, fairness heuristics, social entities, and other denizens of organizational justice. *Journal of Vocational Behavior* 2001;58:164–209.
35. Miller DT. Disrespect and the experience of injustice. *Annual Review of Psychology* 2001;52:527–53.
36. Greenberg J, Colquitt JA. *Handbook of Organizational Justice*. Mahwah, NJ: Erlbaum; 2005.
37. Colquitt JA, Scott BA, Rodell JB, Long DM, Zapata CP, Conlon DE, et al. Justice at the millennium, a decade later: a meta-analytic test of social exchange and affect-based perspectives. *Journal of Applied Psychology* 2013;98:199–236.
38. Whitman DS, Caleo S, Carpenter NC, Horner MT, Bernerth JB. Fairness at the collective level: A meta-analytic examination of the consequences and boundary conditions of organizational justice climate. *Journal of Applied Psychology* 2012;97:776–91.
39. Colquitt JA, Greenberg J, Zapata-Phelan CP. What is organizational justice? A historical overview. In: Greenberg J, Colquitt JA, eds. *The Handbook of Organizational Justice*. Mahwah, NJ: Erlbaum; 2005.
40. Colquitt JA, Lepine JA, Piccolo RF, Zapata CP, Rich BL. Explaining the justice-performance relationship: Trust as exchange deepener or trust as uncertainty reducer? *Journal of Applied Psychology* 2012;97:1–15.
41. See note 33, Colquitt et al. 2001.
42. See note 40, Colquitt et al. 2012.
43. See note 33, Colquitt et al. 2001.
44. See note 37, Colquitt et al. 2013.
45. Posthuma R, Maertz C, Dworkin J. Procedural justice's relationship with turnover: explaining past inconsistent findings. *Journal of Organizational Behavior* 2007;28:281–398.
46. See note 33, Colquitt et al. 2001.
47. Elovainio M, Kivimaki M, Helkama K. Organization justice evaluations, job control, and occupational strain. *Journal of Applied Psychology* 2001;86:418–24.
48. See note 11, McEwen 1998.
49. See note 47, Elovainio et al. 2001.
50. Elovainio M, Kivimaki M, Vahtera J. Organizational justice: Evidence of a new psychosocial predictor of health. *American Journal of Public Health* 2002;92:105–8.
51. Elovainio M, Linna A, Virtanen M, Oksanen T, Kivimaki M, Pentti J, et al. Perceived organizational justice as a predictor of long-term sickness absence due to diagnosed mental disorders: Results from the prospective longitudinal Finnish Public Sector Study. *Social Science and Medicine* 2013;91:39–47.
52. Ndjaboue R, Brisson C, Vezina M. Organisational justice and mental health: a systematic review of prospective studies. *Occupational and Environmental Medicine* 2012;69:694–700.
53. Fishta A, Backe EM. Psychosocial stress at work and cardiovascular diseases: An overview of systematic reviews. *International Archives of Occupational and Environmental Health* 2015;88:997–1014.
54. Eller N, Netterström B, Gyntelberg F, Kristensen TS, Nielsen F, Steptoe A, et al. Work-related psychosocial factors and the development of ischemic heart disease. *Cardiology in Review* 2009;17:83–97.
55. Elovainio M, Leino-Arjas P, Vahtera J, Kivimaki M. Justice at work and cardiovascular mortality: A prospective cohort study. *Journal of Psychosomatic Research* 2006;61:271–4.
56. Kivimaki M, Ferrie JE, Brunner E, Head J, Shipley MJ, Vahtera J, et al. Justice at work and reduced risk of coronary heart disease among employees: The Whitehall II Study. *Archives of Internal Medicine* 2005;165:2245–51.
57. Theorell T, Jood K, Jarvholm LS, Vingard E, Perk J, Ostergren PO, et al. A systematic review of studies in the contributions of the work environment to ischaemic heart disease development. *European Journal of Public Health* 2016;26:470–7.
58. Nyberg A, Alfredsson L, Theorell T, Westerlund H, Vahtera J, Kivimaki M. Managerial leadership and ischaemic heart disease among employees: The Swedish WOLF study. *Occupational and Environmental Medicine* 2009;66:51–5.
59. Elovainio M, Kivimaki M, Puttonen S, Lindholm H, Pohjonen T, Sinervo T. Organisational injustice and impaired cardiovascular regulation among female employees. *Occupational and Environmental Medicine* 2006;63:141–4.
60. Gimeno D, Tabak AG, Ferrie JE, Shipley MJ, De Vogli R, Elovainio M, et al. Justice at work and metabolic syndrome: The Whitehall II study. *Occupational and Environmental Medicine* 2010;67:256–62.
61. Elovainio M, Ferrie JE, Singh-Manoux A, Gimeno D, De Vogli R, Shipley M, et al. Organisational justice and markers of inflammation: the Whitehall II study. *Occupational and Environmental Medicine* 2010;67:78–83.
62. Elovainio M, Kivimaki M, Vahtera J, Keltikangas-Jarvinen L, Virtanen M. Sleeping problems and health behaviors as mediators between organizational justice and health. *Health Psychology* 2003;22:287–93.

63. Lallukka T, Halonen JI, Sivertsen B, Pentti J, Stenholm S, Virtanen M, et al. Change in organizational justice as a predictor of insomnia symptoms: Longitudinal study analysing observational data as a non-randomized pseudo-trial. *International Journal of Epidemiology* 2017 [Epub ahead of print].
64. Elovainio M, Singh-Manoux A, Ferrie JE, Shipley M, Gimeno D, De Vogli R, et al. Organisational justice and cognitive function in middle-aged employees: The Whitehall II study. *Journal of Epidemiology and Community Health* 2012;66:552–6.
65. Kouvonen A, Kivimäki M, Elovainio M, Vaananen A, De Vogli R, Heponiemi T, et al. Low organisational justice and heavy drinking: A prospective cohort study. *Occupational and Environmental Medicine* 2008;65:44–50.
66. Kouvonen A, Vahtera J, Elovainio M, Cox SJ, Cox T, Linna A, et al. Organisational justice and smoking: The Finnish Public Sector Study. *Journal of Epidemiology and Community Health* 2007;61:427–33.
67. See note 26, Brockner et al. 2007.
68. Van den Bos K, Lind EA. Uncertainty management by means of fairness judgments. In: Zanna MP, ed. *Advances in Experimental Social Psychology*. San Diego, CA: Academic Press; 2002.
69. See note 37, Colquitt et al. 2013.
70. See note 9, Blau 1964.
71. See note 40, Colquitt et al. 2012.
72. See note 68, Van den Bos, Lind 2002.
73. See note 37, Colquitt et al. 2013.
74. Skarlicki DP, Folger R. Retaliation in the workplace: The roles of distributive, procedural, and interactional justice. *Journal of Applied Psychology* 1997;82:434–43.
75. See note 37, Colquitt et al. 2013.
76. Colquitt JA, Zapata-Phelan CP, Robertson QM. Justice in teams: A review of fairness effects in collective contexts. In: Martocchio JJ, ed. *Research in Personnel and Human Resources Management*. Maryland Heights, MO: Elsevier Science/JAI Press; 2005.
77. See note 38, Whitman et al. 2012.
78. Schneider B. The people make the place. *Personnel Psychology* 1987;40:437–53.
79. DeGoeij P. Contagious justice: Exploring the social construction of justice in organizations. *Research in Organizational Behavior* 2000;22:51–102.
80. Lind EA. Fairness heuristic theory: Justice judgments as pivotal cognitions in organizational relations. In: Greenberg J, Cropanzano R, eds. *Advances in Organizational Justice*. Stanford: Stanford University Press; 2001.
81. Salanick GR, Pfeffer J. A social information processing approach to job attitudes and task design. *Administrative Science Quarterly* 1978;23:224–53.
82. See note 38, Whitman et al. 2012.
83. See note 51, Elovainio et al. 2013.
84. Kivimäki M, Elovainio M, Vahtera J, Ferrie JE. Organisational justice and health of employees: Prospective cohort study. *Occupational and Environmental Medicine* 2003;60:27–33.
85. Virtanen M, Kivimäki M, Luopa P, Vahtera J, Elovainio M, Jokela J, et al. Staff reports of psychosocial climate at school and adolescents' health, truancy and health education in Finland. *European Journal of Public Health* 2009;19:554–60.
86. Elovainio M, Pietikainen M, Luopa P, Kivimäki M, Ferrie JE, Jokela J, et al. Organizational justice at school and its associations with pupils' psychosocial school environment, health, and wellbeing. *Social Science and Medicine* 2011;73:1675–82.
87. See note 85, Virtanen et al. 2009.
88. See note 86, Elovainio et al. 2011.
89. Virtanen M, Kurvinen T, Terho K, Oksanen T, Peltonen R, Vahtera J, et al. Work hours, work stress, and collaboration among ward staff in relation to risk of hospital-associated infection among patients. *Medical Care* 2009;47:310–8.
90. Virtanen M, Oksanen T, Kawachi I, Subramanian SV, Elovainio M, Suominen S, et al. Organizational justice in primary-care health centers and glycemic control in patients with type 2 diabetes. *Medical Care* 2012;50:831–5.
91. Elovainio M, Steen N, Presseau J, Francis J, Hrisos S, Hawthorne G, et al. Is organizational justice associated with clinical performance in the care for patients with diabetes in primary care? Evidence from the Improving Quality of Care in Diabetes study. *Family Practice* 2013;30:31–9.
92. See note 38, Whitman et al. 2012.