



**WHO LEADS AND WHO FOLLOWS?
A MIXED METHODS APPROACH BRIDGING
LEADERSHIP AND FOLLOWERSHIP RESEARCH**

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**S/HE WHO CANNOT BE A GOOD FOLLOWER
CANNOT BE A GOOD LEADER**

Aristoteles

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DEUTSCHE ZUSAMMENFASSUNG

WER FÜHRT UND WER FOLGT? EIN MULTIMETHODISCHER ANSATZ,
UM FORSCHUNG ZU *LEADERSHIP* UND *FOLLOWERSHIP* ZU VERBINDEN

Deutsche Zusammenfassung

Was bedeutet *Führen*? Über lange Zeit hinweg haben ForscherInnen und PraktikerInnen das Entstehen und den Erfolg von Führung vorrangig mit den Eigenschaften und dem Verhalten von formalen Führungspersonen erklärt. Die Frage, welchen Beitrag MitarbeiterInnen und das Team als Gesamtes an Führung haben, wurde dagegen stark vernachlässigt (Shamir, 2007). Aus den praktischen Entwicklungen in Organisationen (z.B. kollaborative Arbeitsstrukturen, selbstorganisierte Teams) und den Entwicklungen in der Führungsforschung (siehe Lord et al., 2017; Acton, Foti, Lord, & Gladfelder, 2019) wissen wir heute, dass Führung nicht von einer einzelnen (Führungs-)Person abhängen kann, sondern vielmehr ein sozialer Prozess ist.

Im Einklang damit begreift die vorliegende Dissertation Führung als einen sozial-kognitiven Prozess, der aus der Wahrnehmung und Interaktion von Personen entsteht (Acton et al., 2019). Ein inhärenter Bestandteil zum Entstehen und Erkennen von Führung ist dabei die Kognition der beteiligten Akteure: Kognitive Strukturen wie beispielsweise das Selbstkonzept¹ prägen das eigene Verhalten in sozialen Interaktionen und beeinflussen darüber hinaus wie diese Interaktionen wahrgenommen und erlebt werden (Lord & Brown, 2004). Führung ist daher nicht an eine formale Position gebunden, sondern entsteht durch das Erleben und daraus resultierende Verhalten von Individuen.

In zwei Teilen vertieft die vorliegende Arbeit das theoretische und praktische Verständnis von Führung als einen sozial-kognitiven Prozess. Der erste Teil der Arbeit widmet sich dabei

¹ Das Selbstkonzept ist eine facettenreiche kognitive Struktur, welche die gesammelten Überzeugungen von Individuen in Bezug auf sich selbst organisiert (Fiske & Taylor, 2013). Über das Selbstkonzept lassen sich intra-individuelle (z.B. Informationsverarbeitung, Affekt, Motivation) und inter-individuelle Prozesse (z.B. soziale Wahrnehmung, Verhalten in sozialen Interaktionen; Markus & Wurf, 1987) erklären.

Führung als bottom-up Prozess innerhalb von hierarchischen Systemen, in denen Rollen als Führungskraft und Mitarbeitende formal festgelegt sind. Die Arbeit verfolgt dabei einen rollenbasierten ‚Followership‘-Ansatz (Uhl-Bien, Riggio, Lowe, & Carsten, 2014).

Rollenbasierte Followership-Ansätze legen das Forschungsinteresse auf MitarbeiterInnen und darauf, wie diese durch ihre Eigenschaften und Verhaltensweisen Führung (mit)gestalten. In diesem Teil wird das aktive Ansprechen von Verbesserungsideen (Promotive Voice; Liang, Farh, & Farh, 2012) als Möglichkeit eingeführt, wie MitarbeiterInnen am Führungsprozess partizipieren. Kernfragen sind dabei: Was motiviert MitarbeiterInnen dazu, aktiv und ungefragt Verbesserungsideen zu äußern? Was bedingt, dass diese MitarbeiterInnen mit ihren Verbesserungsideen Gehör bei ihren Führungskräften finden? Aufbauend auf der Selbstkonzeptbasierten Führungstheorie (Lord & Brown, 2004) analysiere ich hierbei zwei stabile Facetten im kognitiven Selbstkonzept von MitarbeiterInnen (selbstregulatorischer Promotionsfokus, kollektive Identität) als Erklärung für das Entstehen und den Erfolg von bottom-up Führung innerhalb von hierarchischen Rollensystemen.

Im zweiten Teil fokussiert die Arbeit verstärkt auf Flexibilität und Dynamik in Bezug auf das Erkennen und Erleben von Führung. Führung wird als gemeinsamer Prozess beleuchtet, bei dem Führen und Geführt-werden über die Zeit und über verschiedene Aufgaben hinweg zwischen den Mitgliedern eines Teams wechselt (Geteiltes Führen; Pearce & Conger, 2003). Dies betont in verstärktem Maße, dass Führung mental konstruiert wird: Was Teammitglieder als Führung erkennen und erleben ist unabhängig von formalen Rollen oder stabilen Personeneigenschaften, sondern resultiert aus vielschichtigen relationalen Prozessen (d.h. aus Prozessen, die durch soziale Interaktionen zwischen Personen angestoßen werden, wie beispielsweise das Bewusstwerden eigener Expertise). Um geteilte Führung als einen sozial-

kognitiven Prozess besser zu verstehen, erforscht der zweite Teil daher die relationalen Prozesse, welche dem Erleben von geteilter Führung zugrunde liegen und analysiert darüber hinaus wie diese kognitiv repräsentiert sind (d.h. miteinander assoziiert sind). Kernfragen sind: Welche relationalen Prozesse liegen dem Erkennen und Erleben von geteilter Führung zugrunde? Wie sind diese Prozesse kognitiv repräsentiert, um die Dynamik von geteilter Führung zu ermöglichen? Inspiriert vom Konnektionistischen Modell der Führungswahrnehmung (Lord, Brown, Harvey, & Hall, 2001) entwickelt dieser Teil das theoretische Verständnis von geteilter Führung als einen sozial-kognitiven Prozess weiter.

Teil I: Ideen äußern und dabei gehört werden?

Eine Analyse des Selbstkonzepts von MitarbeiterInnen im Kontext von bottom-up Führung

[Engl. Titel: Voicing up and being heard? The role of followers' self-concept for followers' voice and leaders' consultation]

Komplexe und sich schnell wandelnde Arbeitsbedingungen stellen Unternehmen vor die Herausforderung sich kontinuierlich weiterzuentwickeln, um im internationalen Vergleich wettbewerbsfähig zu sein. Aktionen, die top-down von Führungskräften initiiert werden sind hierbei oft zu langsam, um dem Innovationsbedarf, mit dem Unternehmen konfrontiert sind, gerecht zu werden. Entscheidend sind deshalb zusätzlich Aktionen, die bottom-up von MitarbeiterInnen initiiert werden (Lord, 2008). Um besser zu verstehen, welchen Beitrag MitarbeiterInnen im Führungsprozess haben, rufen ForscherInnen dazu auf, gezielt deren Einfluss auf Führungskräfte innerhalb von hierarchischen Rollenstrukturen zu untersuchen (Rollenbasierter Followership-Ansatz; Shamir, 2007; Uhl-Bien et al., 2014).

Das vorliegende Kapitel kommt diesem Aufruf nach. Hierbei entwickle und teste ich ein Modell, welches das aktive Ansprechen von Verbesserungsideen als eine zentrale Möglichkeit

postuliert, damit MitarbeiterInnen von ihrer Führungskraft stärker in den Führungsprozess einbezogen werden. Dabei werden unter Bezugnahme auf die Selbstkonzept-basierte Führungstheorie (Lord & Brown, 2004) zwei zentrale Fragen beantwortet, die noch nicht umfänglich geklärt sind (Morrison, 2014; Uhl-Bien et al., 2014): Was motiviert MitarbeiterInnen dazu, aktiv und ohne Aufforderung Verbesserungsideen gegenüber ihrer Führungskraft anzusprechen? Und unter welchen Bedingungen erfahren diese MitarbeiterInnen ein empfängliches Verhalten ihrer Führungskraft?

Theoretischer Hintergrund und Hypothesen. Die Selbstkonzept-basierte Führungstheorie (Lord & Brown, 2004) hebt die Bedeutung des Selbstkonzeptes zum Verständnis von Führungsprozessen hervor. Das Selbstkonzept ist eine komplexe und facettenreiche kognitive Struktur, die erklärt wie sich Individuen im Jetzt, in der Zukunft und in Relation zu anderen definieren (Lord & Brown, 2004; Markus & Nurius, 1986). Stabile und zeitlich überdauernde Facetten erklären hierbei inter-individuelle Unterschiede in der Kognition und im Verhalten von Individuen (Lord & Brown, 2004; Lord, Gatti, & Chui, 2016). Abgeleitet aus der Selbstkonzept-basierten Führungstheorie analysiert das vorliegende Kapitel zwei für das Verständnis von Führungsprozessen relevante, stabile Facetten im Selbstkonzept von MitarbeiterInnen (Lord & Brown, 2004; Lord, Brown, & Freiberg, 1999; van Knippenberg, van Knippenberg, De Cremer, & Hogg, 2004): Ein selbstregulatorischer Promotionsfokus und eine kollektive Identität.

Der Promotionsfokus (Higgins, 1997) bezeichnet das Ausmaß, zu dem sich Individuen an einem *idealen* Zukunftselbst orientieren, das heißt an ihren Idealen, Wünschen und Hoffnungen. Ein Promotionsfokus sensibilisiert für das Erkennen von Verbesserungsmöglichkeiten, motiviert zur Annäherung an erhoffte Zielzustände und fördert das Eingehen von Risiken, um diese Ziele

zu erreichen (Higgins, 2014). Folglich gehe ich davon aus, dass MitarbeiterInnen mit stark ausgeprägtem Promotionsfokus aktiv Verbesserungsideen gegenüber ihrer Führungskraft ansprechen.

Zur Beantwortung der Frage, unter welchen Bedingungen MitarbeiterInnen, die aktiv Verbesserungsideen ansprechen, ein empfängliches Verhalten ihrer Führungskraft erfahren (konsultierendes Verhalten der Führungskraft; Yukl & Fu, 1999), zieht das erste Kapitel die kollektive Identität von MitarbeiterInnen heran. Eine kollektive Identität bezeichnet ein hohes Inklusionsniveau, mit dem sich Individuen definieren (d.h. eine Verschiebung vom „Ich“ zum „Wir“): Individuen mit hoher kollektiver Identität definieren sich über ihre Zugehörigkeit zu sozialen Gruppen, verinnerlichen die Werte der Gruppen und setzen sich langfristig für die Interessen und das Wohl ihrer Gruppe ein. Daher postuliere ich, dass eine kollektive Identität auf Seiten der MitarbeiterInnen Voraussetzung dafür ist, dass das aktive Ansprechen von Verbesserungsideen mit einem empfänglichen Verhalten der Führungskraft erwidert wird: Führungskräfte sollten sich nur dann empfänglich gegenüber sich aktiv einbringenden MitarbeiterInnen zeigen, wenn diese MitarbeiterInnen stabil und langfristig am Wohl der Gruppe orientiert sind (d.h. eine starke kollektive Identität aufweisen; Lord & Brown, 2004).

Zusammenfassend gehe ich davon aus, dass 1) ein Promotionsfokus positiv mit dem aktiven Ansprechen von Verbesserungsideen zusammenhängt, 2) das Ansprechen von Verbesserungsideen mit einem empfänglichen Verhalten der Führungskraft zusammenhängt und 3) eine kollektive Identität diesen Zusammenhang moderiert: Bei hoher (im Vergleich zu niedriger) kollektiver Identität hängt das Ansprechen von Verbesserungsideen mit einem empfänglichen Verhalten der Führungskraft zusammen.

Methode und Ergebnisse. Bei einer Feldstudie mit drei Erhebungszeitpunkten im Abstand von je vier bis sechs Wochen (N = 177 MitarbeiterInnen) wurden die zwei stabilen Facetten des Selbstkonzeptes (T1²; Promotionsfokus, kollektive Identität), das aktive Einbringen von Verbesserungsideen gegenüber der Führungskraft (T2) und die wahrgenommene Empfänglichkeit der Führungskraft (T3) erfasst. Die Ergebnisse bestätigen, je stärker der Promotionsfokus von MitarbeiterInnen, desto mehr sprechen diese zu einem späteren Zeitpunkt aktiv Verbesserungsideen gegenüber der Führungskraft an. Das aktive Ansprechen von Ideen steht nicht direkt in Zusammenhang mit einem empfänglichen Verhalten der Führungskraft. Es zeigt sich jedoch eine moderierende Rolle der kollektiven Identität von MitarbeiterInnen: Das Einbringen von Verbesserungsideen hängt nur dann mit einem empfänglichen Verhalten der Führungskraft zusammen, wenn MitarbeiterInnen eine starke kollektive Identität haben.

Diskussion und Schlussfolgerung. Firmenkulturen der Zukunft brauchen Ideen, die bottom-up initiiert werden. Das erste Kapitel erweitert unser Verständnis zum Beitrag von MitarbeiterInnen im Führungsprozess und demonstriert dabei die bedeutende Rolle, welche den stabilen Komponenten des Selbstkonzeptes von MitarbeiterInnen zukommt. Stabile inter-individuelle Unterschiede im Selbstkonzept erklären, welche MitarbeiterInnen auf lange Sicht motiviert sind, sich durch das aktive Ansprechen von Verbesserungsideen am Führungsprozess zu beteiligen. Damit MitarbeiterInnen jedoch tatsächlich von ihren Führungskräften miteinbezogen werden, ist eine stabile Orientierung an den Interessen der Gruppe auf Seiten der MitarbeiterInnen bedingende Voraussetzung.

² T1 bezeichnet den ersten Erhebungszeitpunkt, T2 den zweiten Erhebungszeitpunkt, T3 den dritten Erhebungszeitpunkt.

Teil II: Wie nehmen Teammitglieder geteilte Führung wahr?

Eine qualitative Netzwerkanalyse zu den kognitiven Strukturen von geteilter Führung

[Engl. Titel: Cognitive structures that drive perceptions of shared leadership: A qualitative network study]

In komplexen Kontexten reicht das Wissen einzelner Personen nicht aus, um den Innovationsbedarf zu decken, mit dem Teams konfrontiert sind. In diesen Kontexten ist es nötig, dass mehrere Personen im Team Führung teilen (Lord & Shondrick, 2011). Geteiltes Führen beschreibt einen dynamischen und interaktiven Prozess der sozialen Einflussnahme zwischen *mehreren* Teammitgliedern (Pearce & Conger, 2003). Darauf aufbauend beleuchtet das zweite Kapitel geteiltes Führen als ein sozial-kognitives Phänomen, welches zum einen relationale Eigenschaften aufweist und zum anderen auf mehreren Ebenen der Interaktion in Gruppen stattfindet. Geteiltes Führen ist relational, da es auf Basis sozialer Interaktionen entsteht, in denen sich Teammitglieder gegenseitig als Führungspersonen wahrnehmen und darauf reagieren (z.B. ein Teammitglied übernimmt die Moderation einer Diskussion, die anderen Teammitglieder gewähren dies). Geteiltes Führen ist zudem ein Mehrebenen-Prozess, da diese relationalen Prozesse formell und informell entstehen und auf mehreren Ebenen der Interaktion in Gruppen sichtbar werden: Auf individueller Ebene (z.B. durch das Bewusstwerden von individueller Expertise), auf Teamebene (z.B. durch geteiltes Wissen zu Werten im Team) und in Bezug zur formalen Führungskraft (z.B. durch stimulierende Impulse der Führungskraft; Friedrich, Vessey, Schuelke, Ruark, & Mumford, 2009; Scott, Jiang, Wildman, & Griffith, 2018).

Geteiltes Führen geht damit einher, dass Führung über die Zeit und über Aufgaben hinweg flexibel zwischen mehreren Personen wechselt. Aufgrund dieser Flexibilität ist aktuell nicht ausreichend geklärt, *wie* Teammitglieder geteiltes Führen erkennen und erleben. Im

Allgemeinen verfügen Individuen über relativ stabile kognitive Strukturen, um Führungspersonen von Nicht-Führungspersonen zu unterscheiden (so genannte Implizite Führungstheorien; Epitropaki, Sy, Martin, Tram-Quon, & Topakas, 2013). Diese bilden sich durch Erfahrungen aus und umfassen eine Reihe führungstypischer Attribute und Merkmale (Epitropaki et al., 2013; Shondrick & Lord, 2010). Bei geteilter Führung greifen diese stabilen kognitiven Strukturen jedoch nicht mehr, da Führung nicht an Personen gebunden ist, sondern mit einem dynamischen Wechsel von Personen, Situationen und Verhaltensweisen einhergeht. Die Wahrnehmung von geteilter Führung verlangt daher Flexibilität und Anpassungsfähigkeit in den kognitiven Strukturen von Teammitgliedern (Shondrick, Dinh, & Lord, 2010).

Diese Komplexität beim Erleben von geteilter Führung ist zwar theoretisch erkannt, jedoch empirisch kaum beforscht. ForscherInnen rufen daher dazu auf, die kognitiven Strukturen zu erforschen, welche der Wahrnehmung und dem Erleben von geteilter Führung zugrunde liegen (Denis, Langley, & Sergi, 2012; Shondrick et al., 2010). Ziel des zweiten Teils der Arbeit ist daher, unter Bezugnahme auf das Konnektionistische Modell der Führungswahrnehmung (Lord et al., 2001) diese Lücke zu adressieren. Kernfragen sind hierbei: Welche relationalen Prozesse auf mehreren Ebenen unterliegen dem Erleben von geteilter Führung in Teams? Wie sind diese Prozesse kognitiv repräsentiert?

Theoretischer Hintergrund. Das Konnektionistische Modell der Führungswahrnehmung (Lord et al., 2001) erklärt das Erkennen und Erleben von Führung auf Basis von kognitiven Netzwerkstrukturen. Informationen werden innerhalb dieser Netzwerkstrukturen über vielfältig miteinander verknüpfte Einheiten verarbeitet. Wird eine Einheit im Netzwerk aktiviert (gehemmt), leiten die Verknüpfungen zwischen den Einheiten diese Aktivierung (Hemmung) weiter. Obwohl die einzelnen Verknüpfungen relativ stabil sind,

ist das übergeordnete Aktivierungsmuster flexibel: Vielfältige externe (z.B. der situative Kontext) und interne Faktoren (z.B. die eigene Identität oder der selbstregulatorische Fokus) üben parallel Einfluss auf die Aktivierung im Netzwerk aus. Das jeweils resultierende Aktivierungsmuster über mehrere Einheiten repräsentiert das Erkennen und Erleben von Führung. Konnektionistische Modelle erklären auf diese Art und Weise wie eine flexible Anpassung menschlicher Kognitionen zustande kommt.

Methode. Individuen haben nur begrenzt Einblick in die eigene Kognition (Nisbett & Wilson, 1977), was den Einsatz quantitativer Fragebögen erschwert. Zur Annäherung an nicht unmittelbar greifbare Phänomene sind qualitative Forschungsmethoden besser geeignet (Kempster & Parry, 2011). Es wurden daher Interviews mit Teammitgliedern (N=36) zu deren Erleben von geteilter Führung durchgeführt. Diese Interviews wurden transkribiert anschließend in einem zweiseitigen Verfahren ausgewertet: Zunächst wurden die Interviewtranskripte nach einem induktiven Ansatz der Grounded Theory (Corbin & Strauss, 2015; Charmaz, 2014) kodiert, um zu identifizieren welche relationalen Prozesse auf mehreren Ebenen mit dem Erkennen und Erleben von geteilter Führung einhergehen. Im Anschluss daran wurden die kodierten Interviewtranskripte mit Hilfe von qualitativer Netzwerkanalyse (Pokorny et al., 2018) als Netzwerkstruktur analysiert (d.h. als ein Netzwerk über alle Interviews hinweg): Die identifizierten relationalen Prozesse stellen die Einheiten im Netzwerk dar, die über ihre chronologische Reihenfolge innerhalb der Interviewtranskripte miteinander verknüpft sind. Inspiriert von den Annahmen eines Konnektionistischen Modells zeigt die Netzwerkanalyse, welche relationalen Prozesse absolut und in Assoziation miteinander besonders zentral für das Erleben von geteilter Führung sind, sowie welche übergeordneten Cluster sich zeigen, innerhalb derer mehrere relationale Prozesse stark miteinander assoziiert sind.

Ergebnisse. Auf Basis der Interviews wurden 23 relationale Prozesse identifiziert, die sich auf individueller Ebene (z.B. Bewusstwerden eigener Expertise), auf Teamebene (z.B. gemeinsame Werte und Standards) und in Interaktion mit einer formalen Führungskraft (z.B. Stimulieren und Initiieren) zeigen. Insgesamt bilden diese Prozesse ein dichtes Netzwerk. Dies spricht dafür, dass für das Erkennen und Erleben von geteilter Führung mehrere relationale Prozesse zusammenspielen (z.B. Impulse durch die Führungskraft und das Bewusstwerden eigener Expertise). Als sehr relevant erwies sich hierbei die Assoziation zwischen dem Prozess „Führung gewähren“ auf Teamebene und „Führung einfordern“ auf Individualebene. Im Netzwerk zeigen sich darüber hinaus drei übergeordnete Cluster, innerhalb derer die Prozesse stark miteinander assoziiert sind: 1) Das Cluster Prozesse zur Interaktion von Individuum und Team nimmt einen zentralen Stellenwert ein und umfasst Prozesse auf Individual- und Teamebene, wie beispielsweise „Führung gewähren“ und „Führung einfordern“; 2) Das Cluster Prozesse zum Teamzusammenhalt umfasst Prozesse auf Teamebene, wie „Offenheit und Transparenz“; 3) Das Cluster Prozesse zur Motivation und Befähigung umfasst Prozesse, die mit formaler Führung assoziiert sind (z.B. Moderation) sowie je einen Prozess auf Team- (eine gemeinsame Vision) und Individualebene (Entwicklung von Interesse und Motivation).

Diskussion und Schlussfolgerung. Das zweite Kapitel vertieft das Verständnis von geteilter Führung als einen sozial-kognitiven Prozess. Teammitglieder erleben geteilte Führung, wenn mehrere Prozesse auf Individual-, Team- und formaler Führungsebene zusammenspielen. Besonders bedeutsam sind hierbei Interaktionen zwischen Individuum und Team, welche in einem (geteilten) Bewusstsein zur Kompetenzverteilung, sowie in gegenseitigem Bestärken und Bestärkt-werden resultieren. Weiter spielen Interaktionen mit der formalen Führungskraft eine bedeutende Rolle, welche Teams und Individuen zu geteilter Führung motivieren und befähigen.

Referenzen

- Acton, B. P., Foti, R. J., Lord, R. G., & Gladfelter, J. A. (2019). Putting emergence back in leadership emergence: A dynamic, multilevel, process-oriented framework. *The Leadership Quarterly*, 30(1), 145–164
- Charmaz, K. (2014). *Constructing grounded theory*. Los Angeles: SAGE Publications.
- Corbin, J., & Strauss, A. (2015). *Basics of qualitative research. Techniques and procedures for developing grounded theory* (fourth edition). Los Angeles: SAGE Publications.
- Denis, J.-L., Langley, A., & Sergi, V. (2012). Leadership in the plural. *The Academy of Management Annals*, 6(1), 211–283.
- Epitropaki, O., Sy, T., Martin, R., Tram-Quon, S., & Topakas, A. (2013). Implicit leadership and followership theories “in the wild”: Taking stock of information-processing approaches to leadership and followership in organizational settings. *The Leadership Quarterly*, 24(6), 858–
- Fiske, S. T., & Taylor, S. E. (2013). *Social cognition: From brains to culture*. Los Angeles, CA: Sage.
- Friedrich, T. L., Vessey, W. B., Schuelke, M. J., Ruark, G. A., & Mumford, M. D. (2009). A framework for understanding collective leadership: The selective utilization of leader and team expertise within networks. *The Leadership Quarterly*, 20(6), 933–958.
- Higgins, E. T. (1997). Beyond pleasure and pain. *American Psychologist*, 52(12), 1280–1300.
- Higgins, E. T. (2014). Promotion and Prevention: How “0” can create dual motivational forces. In J. W. Sherman, B. Gawronski, & Y. Trope (Eds.), *Dual-Process Theories of the Social Mind* (pp. 423–435). New York, NY: Guilford Press.
- Johnson, R. E., Venus, M., Lanaj, K., Mao, C., & Chang, C.-H. (2012). Leader identity as an antecedent of the frequency and consistency of transformational, consideration, and abusive leadership behaviors. *Journal of Applied Psychology*, 97(6), 1262–1272.
- Kempster, S., & Parry, K. W. (2011). Grounded theory and leadership research: A critical realist perspective. *The Leadership Quarterly*, 22(1), 106–120.
- LePine, J. A., & van Dyne, L. (1998). Predicting voice behavior in work groups. *Journal of Applied Psychology*, 83(6), 853–868.
- Liang, J., Farh, C., & Farh, J.-L. (2012). Psychological antecedents of promotive and prohibitive Voice: A Two-Wave Examination. *Academy of Management Journal*, 55, 71–92.

- Lord, R. G. (2008). Followers' cognitive and affective structures and leadership processes. In R. E. Riggio, I. Chaleff, & J. Lipman-Blumen (Eds.), *The art of followership: How great followers create great leaders and organizations* (pp. 255–266). San Francisco, CA: Jossey-Bass.
- Lord, R. G., & Brown, D. J. (2004). *Leadership processes and follower self-identity*. Mahwah, New Jersey: Lawrence Erlbaum Associates Publishers.
- Lord, R. G., Day, D. V., Zaccaro, S. J., Avolio, B. J., & Eagly, A. H. (2017). Leadership in applied psychology: Three waves of theory and research. *Journal of Applied Psychology*, *102*(3), 434–451.
- Lord, R. G., & Shondrick, S. J. (2011). Leadership and knowledge: Symbolic, connectionist, and embodied perspectives. *The Leadership Quarterly*, *22*(1), 207–222.
- Lord, R. G., Brown, D. J., & Freiberg, S. J. (1999). Understanding the dynamics of leadership: The role of follower self-concepts in the leader/follower relationship. *Organizational Behavior and Human Decision Processes*, *78*(3), 167–203.
- Lord, R. G., Brown, D. J., Harvey, J. L., & Hall, R. J. (2001). Contextual constraints on prototype generation and their multilevel consequences for leadership perceptions. *The Leadership Quarterly*, *12*(3), 311–338.
- Lord, R. G., Gatti, P., & Chui, S. L.M. (2016). Social-cognitive, relational, and identity-based approaches to leadership. *Organizational Behavior and Human Decision Processes*, *136*, 119–136.
- Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist*, *41*(9), 954–969.
- Markus, H., & Wurf, E. (1987). The dynamic self-concept: A social psychological perspective. *Annual review of psychology*, *38*, 299–337.
- Morrison, E. W. (2014). Employee voice and silence. *Annual Review of Organizational Psychology and Organizational Behavior*, *1*(1), 173–197.
- Nisbett, R. E., & Wilson, T. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological Review*, *(3)*, 231–259.
- Pearce, C. L., & Conger, J. A. (Eds.). (2003). *Shared leadership. Reframing the hows and whys of leadership*. Thousand Oaks: SAGE Publications.
- Pokorny, J. J., Norman, A., Zanesco, A. P., Bauer-Wu, S., Sahdra, B. K., & Saron, C. D. (2018). Network analysis for the visualization and analysis of qualitative data. *Psychological Methods*, *23*(1), 169–183.

- Scott, C. P. R., Jiang, H., Wildman, J. L., & Griffith, R. (2018). The impact of implicit collective leadership theories on the emergence and effectiveness of leadership networks in teams. *Human Resource Management Review, 28*(4), 464–481.
- Shamir, B. (2007). From passive recipients to active co-producers: Followers' roles in the Leadership process. In B. Shamir, R. Pillai, M. C. Bligh, & M. Uhl-Bien (Eds.), *Leadership horizons. Follower-centered perspectives on leadership: A tribute to the memory of James R. Meindl* (pp. ix–xxxix). Greenwich, CT: Information Age Publishing Inc.
- Shondrick, S. J., & Lord, R. G. (2010). Implicit leadership and followership theories: Dynamic structures for leadership perceptions, memory, and leader-follower processes. In G. P. Hodgkinson & J. K. Ford (Eds.), *International Review of Industrial and Organizational Psychology* (Vol. 25, pp. 1–34).
- Shondrick, S. J., Dinh, J. E., & Lord, R. G. (2010). Developments in implicit leadership theory and cognitive science: Applications to improving measurement and understanding alternatives to hierarchical leadership. *The Leadership Quarterly, 21*(6), 959–978.
- Uhl-Bien, M., Riggio, R. E., Lowe, K. B., & Carsten, M. K. (2014). Followership theory: A review and research agenda. *The Leadership Quarterly, 25*(1), 83–104.
- Van Knippenberg, D., van Knippenberg, B., De Cremer, D., & Hogg, M. A. (2004). Leadership, self, and identity: A review and research agenda. *The Leadership Quarterly, 15*(6), 825–856.
- Yukl, G., & Fu, P. P. (1999). Determinants of delegation and consultation by managers. *Journal of Organizational Behavior, 20*, 219–232.

PART I

VOICING UP AND BEING HEARD?

**THE ROLE OF FOLLOWERS' SELF-CONCEPT FOR FOLLOWERS' VOICE
AND LEADERS' CONSULTATION**

Part I

Voicing up and being heard?

The role of followers' self-concept for followers' voice and leaders' consultation

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1. Abstract

Building on a role-based followership framework (Uhl-Bien, Riggio, Lowe, & Carsten, 2014) and on self-concept based approaches to leadership (Lord & Brown, 2004) this study postulates a reverse-the-lens model on voicing up as a means by which followers contribute to the leadership process. We thereby propose a moderated mediation model with two facets of followers' stable self-concept as an antecedent of voicing up as well as a boundary condition for its' effectiveness, respectively. Specifically, we propose that individual differences in self-regulatory promotion focus predict followers' promotive voicing up. We further propose that promotive voicing up provokes leaders' consultation behavior and that this relationship will be moderated by followers' collective self-identity. To test the proposed effects, we conducted a time-lagged study with 177 followers and three waves that were separated by approximately one month, respectively. Results provided support for the proposed moderated mediation model and demonstrated a positive indirect relationship between followers' self-regulatory promotion focus and leaders' consultation behavior through promotive voicing up only for followers with strong collective self-identities. Overall, the study highlights the role of followers' self in fostering followers' participation in the leadership process.

Keywords: followership, self-concept, regulatory focus, self-identity, promotive voice

2. Introduction

In times when businesses cope with rapid and dynamic changes in the pursuit of innovation and continuous improvement, “passive, leader-directed actions are often too slow to be effective in the marketplace” (Lord, 2008, p. 262). Rather, follower-directed actions are needed to achieve the desired outcomes. Although the essential role of followers in leadership has been recognized by scholars it received considerably little attention (Bastardo & van Vugt, 2018; Lord, 2008; Oc & Bashshur, 2013; Shamir, 2007; Uhl-Bien et al., 2014). To balance the predominant focus on leaders’ influence on followers, Shamir (2007) called to ‘reverse the lens’ and to study leaders’ behaviors as outcomes of followership. Addressing this call, the current research applies a role-based followership approach (Uhl-Bien et al., 2014) to study leaders’ consultation behavior as outcome of followers’ self-regulatory promotion focus and subsequent voice behavior directed to the leader.

Research within a followership framework is defined as “the study of the nature and impact of followers and following in the leadership process” (Uhl-Bien et al., 2014, p. 84). It considers how follower characteristics and behaviors may affect leader behaviors and leadership processes. In a hierarchical system with formally assigned roles a central means for followers to exert influence is by directing voice behavior to leaders (i.e., voicing up; Carsten, Uhl-Bien, West, Patera, & McGregor, 2010; Uhl-Bien et al., 2014). Voicing up in general and more specifically promotive voicing up is defined as informally and proactively communicating constructive and improvement-oriented ideas and suggestions to superiors who hold the power to take action (Burris, Detert, & Romney, 2013; Liang, Farh, & Farh, 2012; Liu, Zhu, & Yang, 2010; Morrison, 2014; van Dyne & Lepine, 1998). From a followership perspective, promotive voice is a relevant follower behavior, as it aims to alter and impact work practices. It is further

crucial for leaders and their effective team and organizational functioning, as it enables quick responses to environmental changes and opens up opportunities for innovation, improvement and learning (Detert, Burris, Harrison, & Martin, 2013; Morrison, 2014; Morrison & Milliken, 2000; Morrison & Rothman, 2009). We concur with the view that leadership can only be fully understood when considering followers' contribution to it (Bastardo & van Vugt, 2018; Uhl-Bien et al., 2014). In order to understand promotive voicing up from a followership perspective it thus requires exploring the follower characteristics that on the one hand motivate followers to promotively voice up and on the other hand render leaders' receptive to voice.

With the current research we develop and test a reverse-the-lens model (Shamir, 2007; Uhl-Bien et al., 2014) to study promotive voice as a means by which followers affect their leaders. We aim to understand the characteristics of followers that on the one hand drive them to speak up in order to contribute to the leadership process despite potential risks associated with it, and on the other hand interplay with their voicing up behavior thereby rendering leaders' receptive to voice (Morrison, 2014; Uhl-Bien et al., 2014). To address these questions, we draw on self-concept based approaches to leadership (Lord & Brown, 2004). We propose that a trait self-regulatory promotion focus motivates followers to promotively voice up and that promotive voicing up provokes leaders' consultation behavior. We further propose that followers' collective self-identity interacts with their promotive voicing up behavior to leverage leaders' consultation behavior.

Accordingly, our study seeks to make several contributions to the literature. Firstly, we contribute to current advancements in leadership and followership research that emphasize the need to study leaders' behaviors as outcomes of follower characteristics and behaviors (Carsten, Uhl-Bien, & Huang, 2018; Shamir, 2007; Uhl-Bien et al., 2014). Leadership is a social

relationship that requires the contribution of leaders and followers to its' formation, nature, and its' consequences (Shamir, 2007). Our explicit focus on followers' contribution compliments the vast amount of prior approaches that predominately focused on the leaders' side in leadership. It is only through understanding followers' role in the leadership process that we gain a comprehensive representation of leadership as a social process (Bastardo & van Vugt, 2018; Lord, 2008; Shamir, 2007; Uhl-Bien et al., 2014).

Secondly, we explicitly position followers' voice behavior in the followership literature. A vast amount of studies on voice stem from proactivity research which differs from followership in that it does not necessarily occur in the context of hierarchical relationships and is not necessarily directed towards leaders (Uhl-Bien et al., 2014). However, voice behavior is target-sensitive and followers' motivation to engage in voice as well as its' consequences may differ depending on the recipient to whom voice is raised (Liu et al., 2010). If targeted at leaders, voice may become a particularly risky endeavor, since leaders hold the control over work-related resources (Detert & Burris, 2007; Detert & Edmondson, 2011). By studying voice as proactive followership behavior that is directed towards a leader our study contributes to further clarify the target-sensitive nature of voice behavior (Liu et al., 2010).

Thirdly, we contribute to literature on self-regulatory promotion focus by demonstrating its' role as individual difference variable that motivates followers to contribute to the leadership process. Self-regulatory focus theory gained growing attention in organizational science in recent years and has been studied in relation to commitment, performance-related behaviors and organizational citizenship behaviors (Gorman et al., 2012; Koopmann et al., 2019; Lanaj, Chang, & Johnson, 2012). With regard to voice behavior, Lin and Johnson (2015) demonstrated that within-person variations in state-level promotion focus are linked with increases in promotive

voice towards colleagues. We advance these approaches by focusing on the trait component of followers' self-regulatory promotion that is rooted in followers' self-concept as a driver for followers to contribute to the leadership process.

Fourth, we advance research on followers' self-concept in leadership processes (Lord & Brown, 2004; van Knippenberg, van Knippenberg, De Cremer, & Hogg, 2004) by considering followers' collective self-identity as a boundary condition in followership research. Lord and colleagues (e.g., Lord, 2008; Lord & Brown, 2004; Lord, Brown, & Freiberg, 1999) position followers' self as an important yet underexplored source of variance in understanding leadership processes and van Knippenberg et al. (2004) emphasize the role of followers' self-identity as a moderator of leadership processes. However, research considering voice behavior and its' leadership outcomes mainly focused on proximate moderators (e.g., relational dynamics, performance contexts; Benson, Hardy, & Eys, 2016). In expansion, we apply a more fundamental view and focus on followers' stable self-concept as boundary condition for the effectiveness of voice. Particularly, we emphasize followers' orientation towards the collective as between-person factor that informs which followers successfully provoke leaders' receptiveness in terms of consultation behavior by voicing up. Our proposed moderated mediation model is depicted in Fig. 1.

3. Theory and Hypotheses

3.1 Voice as Followership Behavior

Leadership is a reciprocal interaction process to which both leaders *and* followers actively contribute (Lord, 2008; Shamir, 2007; Uhl-Bien et al., 2014). Followership is therefore positioned within the construct of leadership and concerns the impact of followers and following

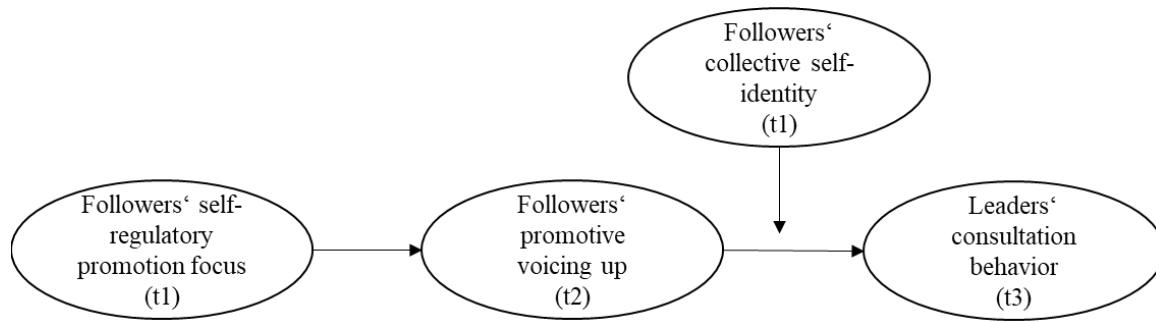


Fig. 1. Proposed moderated mediation model on leaders' consultation behavior as outcome of followers' characteristics and behaviors.

Note. Measurements separated by approximately one month, respectively: T1 refers to the first point of measurement; t2 to the second point of measurement; and t3 to the third point of measurement.

in the leadership process (Uhl-Bien et al., 2014; Uhl-Bien & Carsten, 2018). Although followers' role has been recognized, research overemphasized leaders' part in the leadership process for decades (Lord, 2008). Followers were reduced to passive recipients or contextual moderator of leaders' impact on follower, which heavily limits our insight into leadership processes (Hollander, 1992; Shamir, 2007). To gain a deepened understanding of leadership as a reciprocal process, followership-driven approaches reverse the lens and shed light on the nature and impact of followers in the leadership process (Shamir, 2007; Uhl-Bien & Carsten, 2018).

Role-based approaches to followership consider hierarchical systems with formally assigned roles as leaders and followers. They study how leaders are affected by followers' characteristics and behaviors (Shamir, 2007; Uhl-Bien et al., 2014; Uhl-Bien & Carsten, 2018). Followership characteristics refer to characteristics that impact how followers define themselves (e.g., motivation, affect, role orientation). Followership behavior refers to the behaviors they enact from their standpoint of formally assigned followers towards their leaders (e.g., voicing, obeying). Followership outcomes may occur at the individual level (e.g., leaders' motivation to

enact leadership), relational level (e.g., leaders consulting with followers), and the work-unit level (e.g., mission fulfillment; Uhl-Bien et al., 2014).

Voicing up is one core followership behavior by which followers may impact their leaders. It concerns the proactive expression of improvement-oriented suggestions for change towards leaders (Morrison, 2014; Uhl-Bien et al., 2014; van Dyne & Lepine, 1998). Followers who see their role as active contributors and partners within the leadership process voice up without being asked and being expected to do so (Carsten et al., 2010; Carsten & Uhl-Bien, 2012). They do so with the intention to “cause a positive change in their work arrangements and thereby exercise control over their workplace rather than just adapt or respond to environmental demands” (Tangirala & Ramanujam, 2012, p. 254). Voicing up is constructive and at the same time challenging (Ashford, Sutcliffe, & Christianson, 2009) and differs from general voice towards peers (Liu et al., 2010). Voicing up can be distinguished by its’ promotive (i.e., expressions of ways to improve existing work practices) and prohibitive forms (i.e., expressions of concerns about existing or impending work practices; Liang et al., 2012). The focus of the present study lies on promotive voicing up which is in line with Van Dyne and LePine’s (1998) original conceptualization of voice and is particularly relevant for followers as active contributors in the leadership process: It aims at altering current states by initiating and integrating new practices and procedures that have not been there before.

Although followers aim to bring about improvement, they risk unwanted interpersonal, relational and political consequences when voicing up (Ashford et al., 2009; Morrison & Milliken, 2000). Consequently, followers often choose to remain silent and withhold their ideas in order to avoid the risks associated with voicing up (Burriss, 2012; Detert & Edmondson, 2011; Morrison, 2014). We argue that the extent to which followers are motivated to promotively

voice up irrespective of its' riskiness can be explained by their stable regulatory orientation towards future ideal self-conceptions (Higgins, 1987).

3.2 Predicting Voicing up by Followers' Self-Concept

In general, individuals' self-concept is a complex, multifaceted and overarching knowledge structure that organizes cognition and behavior (Ferris, Johnson, & Sedikides, 2017; Lord & Brown, 2004; van Knippenberg et al., 2004). It includes schemas with trait and state components that guide how individuals perceive themselves at the present, in the future and in relation to others (Lord & Brown, 2004; Markus & Nurius, 1986; Markus & Wurf, 1987).

Followers' self-concept plays a crucial role in understanding leadership processes and has been studied as mediator and moderator of leaders' influence on followers (Lord et al., 1999; Lord & Brown, 2004; Uhl-Bien et al., 2014; van Knippenberg et al., 2004).

Key to individuals' self-concept is the orientation towards future-oriented possible selves as guiding standards (Markus & Nurius, 1986). The discrepancy between actual self-views (who one currently is) and possible selves (who one could become) powerfully motivate behavior (Higgins, 1997, 1998; Lord & Brown, 2004). Self-regulatory focus theory (Higgins, 1997, 1998) hereby describes two coexisting self-regulatory systems that represent the differences in individuals' cognitive orientations towards future-oriented possible selves: Promotion and prevention foci. Both foci are independent and orthogonal rather than two ends of a continuum and are associated with different behavioral consequences (Lanaj et al., 2012).

A self-regulatory prevention focus involves striving towards fulfilling ought selves, including duties as well as obligations and stems from a need for safety. It is characterized by a sensitivity to the presence or absence of losses, and a preference for vigilant and avoidant-oriented strategies. In contrast, a self-regulatory promotion focus stems from the need for

advancement. It strives towards achieving ideal representations of the self that include one's hopes, wishes and aspirations and is concerned with accomplishments and advancements. It is sensitive to the presence or absence of gains and fosters eager approach-oriented strategies to achieve aspired goals (Brockner & Higgins, 2001; Higgins; Higgins, 1997). A self-regulatory promotion focus is targeted at changing the status quo and taking over risks in order to move forward, which makes it particularly relevant for promotive voicing up as followership behavior (Crowe & Higgins, 1997; Higgins, 2014; Liberman, Idson, Camacho, & Higgins, 1999).

3.2.1 Followers' self-regulatory promotion focus and voicing up. We propose that due to its' orientation towards ideal self-presentations a self-regulatory promotion focus is a key driver for followers to engage in promotive voice behavior towards their leaders. First, a promotion focus sensitizes followers to the presence and absence of positive outcomes and directs followers' attention to consistently recognize opportunities for growth and advancement. Before being able to voice up suggestions for improvement, followers need to perceive and be aware of opportunities for growth (Morrison, 2014). Second, promotive voicing up means to go beyond formal role requirements and to proactively engage in upward communication without being asked to do so. Followers with a generally high promotion focus are intrinsically motivated and guided by their inner ideals rather than external factors (Kark & van Dijk, 2007). Followers' promotion focus at work drives proactive behaviors that go beyond formal expectations. For example, followers with strong promotion focus initiate new practices (Kark, Katz-Navon, & Delegach, 2015), share their knowledge (Li, Liu, Shang, & Xi, 2014), and voice out ideas in the team (Lin & Johnson, 2015). Third, promotive voicing up also requires courage and the willingness to take over risks (Detert & Edmondson, 2011). Leaders who hold the power over

resources such as rewards (e.g., promotions, positive performance evaluations) and punishments (e.g., getting fired or social excluded; Milliken, Morrison, & Hewling, 2003; Burris, 2012) are also responsible for the status quo to a great extent and may perceive the challenging character of promotive voice as offending. For followers “an initial motivation to speak up is likely to manifest in behavior only when the net perceived benefits outweigh potential costs” (Detert & Burris, 2007, p. 870). Followers with a strong and stable promotion focus are concerned with the accomplishment of positive outcomes and direct their behavior towards the maximization of gains. To achieve desired goals, they take on risks even at the expense of possible mistakes (Crowe & Higgins, 1997; Hamstra, Bolderdijk, & Veldstra, 2011; Kark & van Dijk, 2007; Liberman et al., 1999). We therefore propose that followers with strong promotion focus will be likely to promotively voice up as for them the potential benefits will outweigh the risks associated with it.

Hypothesis 1: Followers’ trait promotion focus positively relates to promotive voicing up.

3.3 Predicting Leaders’ Behavioral Response to Followers’ Voice

Followers who promotively voice up are of great potential value for their leaders. They provide their leaders with unique and valuable ideas in order to improve the outcomes of the work group (Carsten et al., 2017; Grant, Parker, & Collins, 2009). Particularly, in times when work requires quick adaptations and innovative solutions followers’ promotive voice plays a critical role for team learning, knowledge sharing and functioning (Ashford et al., 2009; Edmondson, 2003; Liu et al., 2010).

Although promotive voicing up is of particular relevance for leaders, their behavioral response to followers who voice up remains underexplored. Most studies on the consequences of

voice focused on career-related outcomes for followers, such as performance evaluations, promotability or salaries (e.g., (Huang, Xu, Huang, & Liu, 2018; Seibert, Kraimer, & Crant, 2001; Whiting, Maynes, Podsakoff, & Podsakoff, 2012; Whiting, Podsakoff, & Pierce, 2008). However, understanding whether followers' promotive voicing up renders leaders to attune to followers' interests and ideas is essential to shed light on voice from a followership perspective. In cases in which leaders are receptive to followers' ideas, a leadership relationship is formed, and followers gain potential influence on work-related issues. We therefore study whether and under which conditions followers' promotive voicing up leverages leaders' listening and consulting with followers.

3.3.1 Leaders' consultation behavior. Consultation is a form of participative and empowering leader behavior that is defined as the extent to which leaders are perceived by their followers as listening to followers' suggestions on work-related issues and consulting followers for work-related decisions (Tangirala & Ramanujam, 2012; Yukl & Fu, 1999; Yukl, Wall, & Lepsinger, 1990). The extent to which leaders consult with followers varies between followers (Yukl & Fu, 1999). In line with Tangirala and Ramanujam (2012) we thus refer to consultation as the perceived behaviors of the leader directed at individual followers.

Leaders' consultation does not guarantee that the ideas and issues raised by followers are approved and finally implemented. However, consultation behavior signals leaders' appreciation and acceptance of followers as knowledgeable agents and equal contributors in the leadership process. It provides followers with access to the leader and allows them to take influence on their issues of interest (Tangirala & Ramanujam, 2012; Yukl & Fu, 1999).

3.3.2 Followers' voicing up and leaders' consultation. Followers' promotive voicing up may provoke leaders' consultation behavior with the respective followers. By promotively

voicing up followers help to improve work outcomes, identify opportunities for growth and enhance leaders' decision making (Carsten et al., 2018; Detert et al., 2013; Grant, Parker, & Collins, 2009; Milliken et al., 2003). Leaders may thus be particularly motivated to listen and favorably respond to followers who express their ideas towards them. Accordingly, research demonstrated that leaders feel supported and motivated by followers' voice (Carsten et al., 2018) and positively evaluate followers who voice their ideas (van Dyne & Lepine, 1998; Whiting et al., 2008). Further, followers' voicing up has been empirically linked to leaders' consultation behavior (e.g., Tangirala & Ramanujam, 2012). However, those studies emphasized the leader and his/her effects on followers leaving out the potential effect followers' voice may have on leaders. In fact, Tangirala and Ramanujam (2012) admit that "manager's consultation and employees' voice can have reciprocal influences on each other [...] it is plausible that, in turn, employees who engage in voice become more visible to the manager who, hence, might consult with them" (p. 275). Considering advancements in followership research, we propose that followers' promotive voicing up provokes leaders' consultation behavior.

Hypothesis 2: Followers' promotive voicing up is positively related to leaders' consultation behavior.

Although followers' promotive voice offers useful information for leaders, it may not always render leaders' receptive to followers' voice. First, promotive voice behavior challenges the status quo in order to bring about changes. Although followers suggest these changes in order to improve existing practices, leaders may be personally attached to the current state (Detert & Burris, 2007) and perceive followers as criticizers rather than constructive contributors (Burris et al., 2013). Second, promotive voicing up represents personal agency and initiative from followers without being asked to do so (van Dyne & Lepine, 1998). Followers who raise their

voice may thus be viewed as inadequately challenging authority, demanding leadership, or even threatening leaders' image or identity (DeRue & Ashford, 2010; Detert et al., 2013; Milliken et al., 2003). Accordingly, some findings indicate negative consequences of voice on followers' career success (Seibert et al., 2001). Third, leaders hold the responsibility for their work group and may have a broader view and different opinions on what is best for the group. Despite followers' constructive intentions, their ideas might be harmful in some respect for the work group as a whole. Followers who promotively voice up may thus be viewed as not being a team player and lacking prosocial orientation (Burriss et al., 2013; Detert et al., 2013; Milliken et al., 2003).

In sum we argue that followers' promotive voicing up is not always related to leaders' consultation since leaders may not necessarily regard followers' promotive voice as a valuable and prosocial oriented source of information (Morrison, 2014). Rather we concur with the view that "some followers may be more beneficial, constructive, and influential in the leadership process and as a result should differentially impact their leaders" (Oc & Bashshur, 2013, p. 921). We suggest that a strong and stable collective orientation in followers renders it likely that followers' promotive voice elicits leaders' consultation.

3.3.3 Followers' collective self-identity as moderator. As part of followers' self-concept, self-identity describes the level of inclusiveness by which followers define themselves (Brewer & Gardner, 1996; Lord et al., 1999; Lord & Brown, 2004; van Knippenberg et al., 2004). Researchers (e.g., Brewer & Gardner, 1996; Lord & Brown, 2004) emphasized three levels of identity in leaders and followers that shift from "I" to "We" as locus of self-definition: Individual, relational, and collective. At the individual level, followers define themselves mainly through their distinctiveness from others. At the relational level, followers define themselves

through their role-based relationships and dyadic connections with significant others. At the collective level, followers' self-definition is based on their membership in social groups and their contribution to groups' welfare.

Similar to other facets of self-concept (e.g., self-regulatory focus), followers' self-identity has both, trait- and state-like aspects (Johnson, Venus, Lanaj, Mao, & Chang, 2012; Lord & Brown, 2004; Markus & Wurf, 1987). At the trait level, it concerns the general level of inclusiveness across different situations (e.g., Johnson et al., 2012) while at the state-level it predicts momentary self-definitions, activated by situational cues (e.g., Johnson & Lord, 2010). Given our interest in followers' self-concept as an individual-difference boundary condition in predicting leaders' consultation, we focus on the trait-level of followers' self-identity.

We consider followers' collective self-identity as particularly relevant in order to understand which followers are consulted by their leaders. A stable collective self-identity interplays with followers' voice behavior as it informs leaders about the reliability, constructiveness, and pro-social orientation of the issues raised. First, followers with strong collective identities "adopt a long-term time perspective, give more than they receive, and ground their willingness to reciprocate in a deeply held concern for their group" (Jackson, Colquitt, Wesson, & Zapata-Phelan, 2006, p. 890). Their long-term investment to the community and their self-sacrificing behavior reveal them as a reliable source for their leaders. Second, followers with strong collective self-identity internalize the values of the work group (Lord & Brown, 2004). Their ideas express what the group stands for and hopes to achieve for the future, providing constructive information for the benefit of the group. Third, followers with strong collective self-identity emphasize we-ness rather than uniqueness and continuously

communicate their ideas with inclusive language (Johnson et al., 2012), which heightens the probability that their prosocial intentions are recognized.

In line with our reasoning that followers' collective self-identity matters are results from Benson et al. (2016) who conducted qualitative interviews with full-time head coaches of sport teams to better understand when leaders react positively to proactive followership. Leaders positive view depended on followers' demonstration of a collective orientation and followers' active independent thoughts in the context of team values. In line, Burris (2012) demonstrated across three studies that leaders are more likely to endorse followers' voice message when they perceive followers' voice as supportive and the follower as motivated to benefit the collective.

In sum, we propose that followers' collective self-identity is a boundary condition in the relationship between followers' promotive voicing up and leaders' consultation behavior in that sense that only voice of followers with strong collective identities will provoke leaders to consult with the respective follower.

Hypothesis 3: Followers' collective self-identity is a moderator of the relationship between followers' promotive voicing up and leaders' consultation behavior. For followers with strong trait collective self-identities, promotive voicing up positively relates to leaders' consultation behavior. For followers with weak trait collective identities there is no relationship between promotive voicing up and leaders' consultation.

3.4 Predicting Leaders' Consultation by Followers' Self: Moderated Mediation

In the reasoning above, we argued that followers' trait self-regulatory promotion focus positively relates to followers' promotive voicing up. We further proposed an interaction effect of followers' promotive voicing up with followers' trait collective self-identity on leaders' consultation behavior. Taken together, we postulate that followers' self-regulatory promotion

focus will indirectly relate to leaders' consultation behavior through their engagement in promotive voicing up for followers who incorporate a strong collective self-identity.

Research in the context of romantic relationships provide support for our notion that followers' self-regulatory promotion focus may indirectly relate to leaders' consultation via promotive voicing up. The self-regulatory promotion focus of romantic partners has been argued to shape the way in which partners perceive and respond to each other in social interactions (Molden & Winterheld, 2013). Individuals with strong self-regulatory promotion focus perceive their partners as supportive when discussing relationship conflicts and receive greater responsiveness from their partners when discussing promotion-focused goals they believed to be difficult to attain (Winterheld & Simpson, 2011, 2016).

At the same time, romantic relationships differ from leader-follower interactions. Opposed to romantic relationships, leaders and followers work in groups (Thomas, Martin, Epitropaki, Guillaume, & Lee, 2013). For their decisions and actions leaders thus need to strongly focus on the groups' interest in mind. Consequently, leaders are more likely to follow ideas that align with the values and interests of the group. In line, prior research demonstrates that followers with a strong collective identity are likely to be viewed as a source of leadership (Chrobot-Mason, Gerbasi, & Cullen-Lester, 2016).

Voice that stems from followers with strong self-regulatory promotion focus may not necessarily represent the best for the group as a whole. A trait self-regulatory promotion focus has been linked to more personally oriented values such as achievement and power rather than values that represent concern for others' interest (i.e., benevolence, universalism; Leikas, Lönnqvist, Verkasalo, & Lindeman, 2009). Thus, although a strong self-regulatory promotion focus drives followers to recognize opportunities for growth and to take the risks of voicing up, it

may not render leaders to consult with followers. Rather, leaders - as proposed above - should consult with followers who voice up only in cases in which they incorporate a strong and stable orientation towards the interests of the group. Given this proposed boundary condition, we do not assume a direct or indirect relationship between followers' self-regulatory promotion focus and leaders' consultation behavior. Rather, we propose a moderated indirect relationship: Followers self-regulatory promotion focus indirectly relates to leaders' consultation through voicing up only for followers who incorporate a strong collective self-identity.

Hypothesis 4: For followers with strong trait collective self-identities, trait self-regulatory promotion focus is indirectly and positively related to leaders' consultation behavior via promotive voicing up. For followers with weak trait collective self-identities, self-regulatory promotion focus is not related to leaders' consultation.

4. Methods

4.1 Procedures and Sample

We conducted a time-lagged online-survey with three waves of data collection. The waves were separated by a minimum of four and a maximum of six weeks, respectively. Data were collected from followers in Germany recruited via the online sample provider Respondi (see e.g., Braun, Peus, & Frey, 2018; Neff, Niessen, Sonnentag, & Unger, 2013; Pachler et al., 2018; van Quaquebeke, van Knippenberg, & Brodbeck, 2011). Participants were instructed that the surveys concern their attitudes and behaviors at work.

Although data from online panels have been demonstrated to be a reliable source of information (e.g., Buhrmester, Kwang, & Gosling, 2011; Landers & Behrend, 2015; Walter, Seibert, Goering, & O'Boyle, 2018), scholars recommend a careful evaluation of appropriateness and quality of online panel data (Cheung, Burns, Sinclair, & Sliter, 2017; Fleischer, Mead, &

Huang, 2015). To ensure both appropriateness and data quality we defined inclusion criteria and applied direct as well as post-hoc screening techniques.

4.1.1 Inclusion criteria. To ensure that our sample is appropriate for measuring our study constructs (i.e., consistency between construct explication and study operations; Cheung et al., 2017) we specified the following inclusion criteria for participants: Direct reports working under the supervision of a formally assigned leader, regular direct interaction with the leader (i.e., minimum once per week), full-time employment, and academic degree (i.e., academic degree is an established indicator of job autonomy which is a prerequisite for the possibility to voice; Chamberlin, Newton, & Lepine, 2017; Karasek, 1979). We assessed these criteria at the beginning of the first survey and asked participants to indicate significant changes in relation to these criteria at the beginning of the second and the third survey (e.g., change of leader, team and/or organization). Due to significant changes, nine participants were not invited to the third questionnaire and seven were excluded prior to data analysis.

4.1.2 Screening techniques. Careless responses of participants may both inflate and attenuate statistical effects, threatening the reliability and replicability of results (Curran, 2016; Meade & Craig, 2012). We thus undertook several efforts to ensure the quality of our data. Scholars recommend the use of screening methods, particularly a combination of different techniques to account for a full coverage of potential pitfalls (Curran, 2016; DeSimone, Harms, & DeSimone, 2015; Huang, Liu, & Bowling, 2015; Meade & Craig, 2012). We combined instructed items as direct screening technique with three post-hoc indices that were both archival and statistical (DeSimone et al., 2015; Meade & Craig, 2012).

Direct screening. During data assessment we integrated one instructed item in approximately every 70-100 items (e.g., “please indicate the second option from the left”) to

screen out participants who are not paying attention to questionnaire instructions (Meade & Craig, 2012). In the first questionnaire we directly screened out 116 out of 503 participants (23%), in the second questionnaire we screened out eleven out of 269 participants (4%), and in the third we screened out five out of 210 participants (2%).

Post-hoc screening. After data collection we had an initial sample of 198 participants who answered to all three surveys, fulfilled our pre-determined inclusion criteria and were attentive to the direct screening items. Prior to analyses we checked answers to open instructed items that we integrated throughout each survey (e.g., “please write ‘chapter 3’ in the following field”). A total of 12 participants (6%) were excluded who left the field empty, indicated random characters and/or wrote down a wrong number. In addition, based on the assumption that there is minimum of time needed to validly complete surveys (Curran, 2016), we calculated response time cutoff criteria based on the conservative rule of thumb of two seconds per item (Huang, Curran, Keeney, Poposki, & DeShon, 2012) and excluded a total of three participants (1.5%). Further, we calculated the adjusted personal reliability index (DeSimone et al., 2015) for each participant as statistical screening method. Six participants (3%) were excluded due to reliability values below .30 (Johnson, 2005).

Combining direct and indirect techniques, we screened out 131 participants directly and 21 participants post-hoc prior to data analysis.

4.1.3 Sample. The final sample consisted of 177 followers (103 male, 74 female) with a mean age of 44.57 years ($SD = 11.25$, ranging from 25 to 66 years). On average, participants had worked for 5.85 years for their leaders ($SD = 5.80$, ranging from 0 to 28 years). The majority of leaders were male (67.8%). Most participants interacted with their leader every day or many times per day (63.9%). As daily interaction time, a majority reported to spend 6 to 30 minutes

(54.2%) and 31 to 120 minutes (27.6%). On 5-point Likert scales ranging from 1 (*not at all*) to 5 (*many times, if not always*) participants specified the kinds of interactions they had with their leader: face-to-face interactions were indicated with an average of 4.29 ($SD = .79$, ranging from 2 to 5), e-mails with an average of 3.08 ($SD = .97$, ranging from 1 to 5), and phone-calls with an average of 2.81 ($SD = 1.04$; ranging from 1 to 5).

4.2 Measures

At the first point of measurement, participants completed the trait measures (i.e., self-regulatory promotion focus, collective self-identity) and control variables. Four to six weeks later at the second point of measurement, participants estimated their voicing up. Another four to six weeks later at the third point of measurement participants rated their leaders' consultation behavior. Participants responded to all measures at a 5-point Likert scale (from 1=strongly disagree to 5 strongly agree) in German. If not indicated otherwise, item translations were based on a standard procedure of translation and independent back-translation (Brislin, 1970).

4.2.1 Focal variables. *Self-regulatory promotion focus at work* ($\alpha = .85$) was assessed with the nine items of the German version (Keller & Bless, 2006) of the self-regulatory focus scale (Lockwood, Jordan, & Kunda, 2002). The scale originally refers to context of academic success has been applied to the work context in various studies (e.g., Delegach, Kark, Katz-Navon, & van Dijk, 2017; Johnson et al., 2017; Kark et al., 2015; Koopmann et al., 2019). In line with previous work, we adopted the scale to the work context by reformulating the instruction and by replacing words that referred to "academic" by "occupational". Sample items are "I often think about how I will achieve occupational success" and "I often think about the person I would ideally like to be in the future". For additional analyses we further assessed the nine items for *self-regulatory prevention focus at work* ($\alpha = .80$) of the same measure (e.g., "I see myself as

someone who is primarily striving to become the self I "ought" to be - to fulfill my duties, responsibilities, and obligations”).

Collective self-identity ($\alpha = .80$) was assessed with the five items of the “Group Achievement” subscale of the Levels of Self-Concept Scale (LSCS; Selenta & Lord, 2005). The scale emphasizes one’s orientation and contribution towards the group’s success. To develop the LSCS, Selenta and Lord (2005) built on prevalent constructs in the self-identity literature (Brewer & Gardner, 1996) and non-work identity measures (Kashima et al., 1995). Factor analytical and regression results provided support for convergent and discriminant scale validity. Additional evidence for the validity is provided by published work that used the measure (e.g., Chang & Johnson, 2010; Johnson et al., 2012; Johnson, Chang, & Rosen, 2010). Sample items are “I feel great pride when my work team does well, even if I’m not the main reason for its’ success” and “It is important to me to make a lasting contribution to my work organization”.

Voicing up ($\alpha = .95$) was assessed with the 5 items of promotive voice (Liang et al., 2012). Promotive voice captures the expression of new ideas and suggestions for improving work-related practices and procedures and is in line with the conceptualization of voice as constructive challenge with the intent to improve rather than criticize (van Dyne & Lepine, 1998). Promotive voice is constructive as it focuses on future ideal states and challenging as it aims at changing the status quo (Liang et al., 2012). To assess followers’ voicing up towards leaders instead of voicing out as general proactive behavior (Uhl-Bien et al., 2014), we adapted each item by adding “to my manager”. Sample items are “I proactively develop and make suggestions to my manager for issues that may influence the unit” and “I make constructive suggestions to my manager to improve the unit’s operation”. For additional analyses we further assessed the 5 items of prohibitive voice ($\alpha = .88$) of the same measure and the same adaptations

(e.g., Dare to voice to my manager opinions on things that might affect efficiency in the work unit, even if that would embarrass others”).

Leaders' consultation ($\alpha = .87$) was assessed with the three items from Tangirala and Ramanujam (2012). Items stem from the short form of the Managerial Practices Survey (Kim & Yukl, 1995; Yukl et al., 1990) and were rewritten by Tangirala and Ramanujam (2012) to relate to leaders' dyadic behavior towards the follower rather than general leadership behaviors. Items were “My manager consults with me to get my reactions and suggestions before making major changes that will affect me”, “My manager encourages me to express any concerns or doubts that I may have about a proposal under consideration”, and “My manager listens carefully to any concerns that I express about his/her plans without getting defensive”.

4.2.2 Control variables. We introduced two variables as controls that were of theoretical relevance for proactive followership and that interrelated with our outcome variables (Becker et al., 2016): Followers' co-production beliefs and leader-member exchange (LMX). Followers' *co-production beliefs* ($\alpha = .78$) were assessed with the 5-item measure by Carsten and Uhl-Bien (2012). It captures the extent to which followers see their role as partnering with leaders and as active in the co-production of leadership (Carsten & Uhl-Bien, 2012). Co-production beliefs have been linked to upward communication (i.e., voice, constructive resistance; Carsten et al., 2018; Carsten & Uhl-Bien, 2012) and indirectly to leaders' motivation and perceived support by followers (Carsten et al., 2018). *LMX* ($\alpha = .90$) was assessed with the 7 items of the German version (Schyns, 2002) of the LMX-7 (Graen & Uhl-Bien, 1995), which captures the perceived quality of the relationship between follower and leader. A better exchange relationship has been demonstrated to relate to followers' voicing up (Burriss et al., 2013;

Chamberlin et al., 2017) and to play a role in manager's responses to upward voice (Huang et al., 2018).

5. Results

Descriptive statistics and correlations among the study variables are presented in Table 1. Consistent with our hypothesis, self-regulatory promotion focus was positively correlated with followers' promotive voicing up, $r = .30, p < .01$, but not correlated with leaders' consultation behavior, $r = .09, p > .05$. As expected, followers' promotive voicing up was correlated with leaders' consultation behavior, $r = .19, p < .05$.

5.1 Confirmatory Factor Analysis

To test our measurement model, we performed a series of Confirmatory Factor Analyses (CFA) with the lavaan package in R and a Maximum Likelihood estimator. We report exact model fit (χ^2), Comparative Fit Index (CFI), Tucker-Lewis Index, Root Mean Square Error of Approximation (RMSEA) and sample-size adjusted Bayesian Information Criterion (BIC). Although fit indices provide no golden rules, they help to compare different models (Nye & Drasgow, 2011). As a rule of thumb, RMSEA should be close to or lower than 0.06 and CFI as well as TLI higher than 0.90 (Hu & Bentler, 1998, 1999). Our proposed measurement model with four latent factors (i.e., self-regulatory promotion focus, collective self-identity, promotive voicing up, leaders' consultation behavior) exhibited adequate model fit to the data ($\chi^2(203, 177) = 361.59, p < .001$, RMSEA = 0.066, CFI = 0.972, TLI = 0.917, BIC = 9098.04). We further compared the model to two alternative models. Results indicated a better model fit for the proposed model when compared to a three-factor model, where the two trait measures of the first point of measurement (i.e., self-regulatory promotion focus, collective self-identity) loaded on one factor ($\chi^2(206, 177) = 545.87, p < .001$, RMSEA = 0.097, CFI = 0.844, TLI = 0.825,

Table 1. Means, standard deviations, correlations and reliabilities of study variables.

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11
First point of measurement													
1. Age	44.57	11.25											
2. Sex ^a	1.42	.50	-.09										
3. Time working with the leader	5.85	5.80	.47**	-.02									
4. LMX	3.51	.77	.02	.14	.09	(.90)							
5. Coproduction beliefs	4.87	.72	.09	-.10	.09	.10	(.78)						
6. Self-regulatory promotion focus	3.30	.68	-.24**	.08	-.06	.02	-.09	(.85)					
7. Self-regulatory prevention focus	2.62	.66	-.27**	.16*	-.04	-.05	-.04	.33**	(.80)				
8. Collective self-identity	3.90	.67	.00	.06	.14	.24**	.12	.46**	.02	(.80)			
Second point of measurement													
9. Promotive voicing up	3.55	.95	.03	.09	.17*	.15*	.25*	.30**	.02	.36**	(.95)		
10. Prohibitive voicing up	3.65	.78	.09	-.09	.19**	.22**	.25*	.14	-.20**	.30**	.54**	(.88)	
Third point of measurement													
11. Leaders' consultation behavior	3.45	1.05	.03	.06	.11	.67**	.07	.09	-.01	.15	.19*	.22**	(.87)

Note. $N = 177$; ^a Gender (1 = male, 2 = female); First, second and third point of measurements were separated by a time lag of four to six weeks, respectively.

* $p < .05$ (two-tailed test)

** $p < .01$ (two-tailed test)

BIC = 9276.39, χ^2 diff = 184.28, $p < .001$) and when compared to a one-factor model, where all items loaded on one common factor ($\chi^2(209,177) = 1313.79$, $p < .001$), RMSEA = 0.173, CFI = 0.492, TLI = 0.439, BIC = 10038.19, χ^2 diff = 952.21, $p < .001$).

5.2 Hypotheses Testing

To test our hypotheses, we applied hierarchical linear regressions and the PROCESS macro in SPSS (Hayes, 2017). Using the latter enables to test the direct and indirect effects in the relationship between promotion focus, voicing up and consultation, and uses bootstrap estimates to construct bias-corrected confidence intervals.

For Hypothesis 1, we predicted that followers' trait promotion focus positively relates to voicing up behavior. In a first step, we entered the control variables (i.e., followers' co-production beliefs, LMX) and in a second step the predictor (i.e., trait promotion focus) in the regression equation. Results revealed that followers' trait promotion focus predicted voicing up one month later ($\beta = .43$, $p < .001$), supporting Hypothesis 1. For Hypothesis 2, we proposed that followers' promotive voicing up positively relates to leaders' consultation behavior. Contrary to predictions, voicing up was not related to leaders' consultation behavior ($\beta = .11$, *ns*). For Hypothesis 3 we predicted followers' collective self-identity as moderator in the relationship between voicing up and leaders' consultation. Moderation analyses revealed a significant interaction effect between followers' voicing up and their collective self-identity ($b = .19$, $SE = .09$, 95% CI [.02; .36]) in the proposed direction: Under the condition that followers have strong collective self-identities, voicing up was positively related to leaders' consultation one month later ($b = .69$, $SE = .27$, 95% CI [.09; .45]). The interaction effect is depicted in Fig. 2. Finally, in Hypothesis 4 we predicted that for followers with strong collective self-identities, a trait promotion focus indirectly relates to leaders' consultation behavior via promotive voicing

up. Conditional mediation analyses revealed no direct relationship between followers' promotion focus and leaders' consultation behavior ($b = .14$, $SE = .10$, 95% CI $[-.06; .33]$), but a conditional indirect effect ($b = .08$, $SE = .05$, 95% CI $[.01; .19]$), that supports our hypothesized conditional mediation effect: Under the condition that followers have strong collective self-identities, a trait promotion focus indirectly and positively related to leaders' consultation behavior via promotive voicing up ($b = .11$, $SE = .05$, 95% CI $[.03; .23]$). Thus, Hypothesis 4 was supported³.

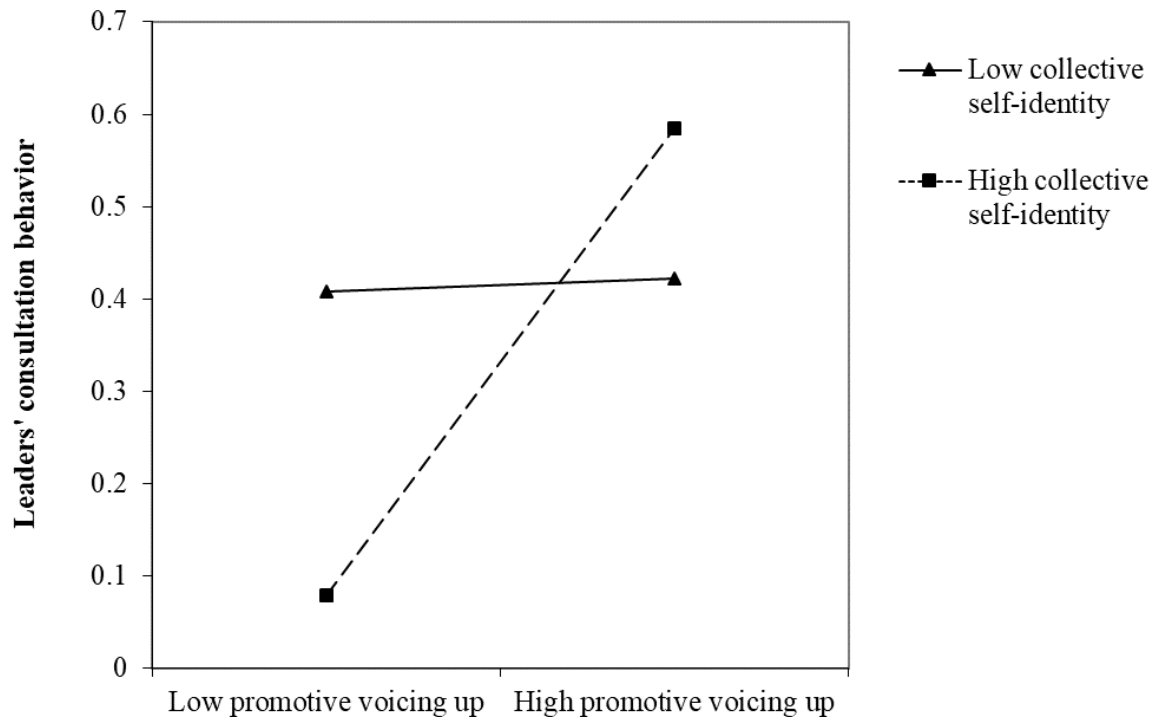


Fig. 2. Interaction between followers' promotive voicing up and followers' collective self-identity on leaders' consultation behavior.

³ As recommended by Becker et al. (2016), we also conducted our analyses without control variables, obtaining the same pattern of results.

5.3 Additional Analyses

Although our research centered on promotive voicing up as a followership behavior that aims to alter the status quo in order to implement new work practices and projects, we were interested whether followers' trait self-regulatory prevention focus was related to prohibitive voicing up and to leaders' consultation behavior at a later point in time.

Theoretically, individuals' self-regulatory prevention focus has been argued to be positively related to followers' prohibitive voice (i.e., their expression of concerns about potential troublesome work practices) due to its' congruent focus on security and protection from harm (Chamberlin et al., 2017; Liang et al., 2012). Further, Lin and Johnson (2015) demonstrated that individuals' state prevention focus predicted an increase in prohibitive voicing out towards peers on consecutive days and weeks. These prior results may suggest a positive relationship between followers' trait prevention focus and prohibitive voice. However, considering prohibitive voice from a followership perspective could also suggest a different pattern of results. As outlined earlier, voice is target-sensitive and risky when directed to leaders (Liu et al., 2010). Particularly prohibitive voicing up may bring risks for followers as it points to problems associated with practices rather than opportunities for advancement. Followers with trait self-regulatory prevention focus are vigilant and avoid any kinds of risks (Lieberman et al., 1999). From a followership perspective it may therefore be plausible to assume that followers' self-regulatory prevention focus is not related or even negatively related to prohibitive voicing up. Applying explorative analysis to our data, we found a negative relationship between followers' prevention focus and prohibitive voicing up ($\beta = -.20, p < .05$). Further, followers' collective self-identity did not interact with prohibitive voicing up in predicting leaders' consultation behavior ($b = -.10, SE = .08, 95\% CI [-.31; .10]$).

6. Discussion

Drawing on a role-based followership-approach (Uhl-Bien et al., 2014) and self-concept based theories of leadership (Lord & Brown, 2004) the present study developed a reverse-the-lens model to study which followers are likely to contribute to the leadership process by promotively voicing up and by getting their leaders to consult with them at a later point in time. Findings demonstrated that followers with a strong self-regulatory promotion focus are likely to challenge the status quo by voicing their ideas and suggestions to their leaders. Further, our analyses revealed followers' collective self-identity as a boundary condition that determines whether leaders are responsive to followers' who voice up. In cases in which followers incorporate strong collective self-identities leaders responded to followers' voice by listening to their suggestions and consulting them on relevant topics. In a final step, linking these propositions, we showed that followers' self-regulatory promotion focus indirectly predicted leaders' consultation behavior two months later through promotive voicing up for followers with strong collective self-identities.

6.1 Theoretical Implications

The current research extends existing work and contributes to leadership and followership research in the following ways. First, our research shifts the focal interest from leaders' to followers' contribution to the leadership process. This is in line with the call to "reverse the lens" (Shamir, 2007) and various critics on misleading leader-centricity in past and present leadership research (Bastardo & van Vugt, 2018; Day, 2014; Hollander, 1992). As Bastardo and van Vugt (2018, p. 82) point out, "on any occasion, we are much more likely to be followers than leaders". Thus, in order to understand the very essence of leadership as a process it is most relevant to understand what motivates and enables followers to contribute to the

leadership process. Our findings thereby reinforce followers' self as core mechanism to understand leadership and also followership processes (Lord & Brown, 2004; Lord & Chui, 2017; van Knippenberg et al., 2004): While ideal possible self-presentations motivate followers to voice up despite potential risks, a collective self-identity reveals to be a premise to render leaders' consultation with followers who voice up.

Regarding followers' motivation to voice up, we advance recent results that considered followers' proactive role-orientation (i.e., followers' beliefs that they should actively engage in the leadership process to advance mutual goals) as driver for upward voice (Carsten et al., 2018; Carsten & Uhl-Bien, 2012). With our findings we demonstrate that beyond these stable beliefs, followers' trait self-regulatory promotion focus explains why followers voice up to their leaders. The self-regulatory promotion focus is not directly concerned with how to enact ones' roles of leaders and followers. Rather, it provides a fundamental motivational explanation that is grounded in an individuals' orientation towards future ideal selves. Ideal self-presentations thus motivate followers to voice up in order to approach desired end-states irrespective of whether they hold a co-production role orientation. Voicing up can be interpreted as a verbal claim for leadership (DeRue & Ashford, 2010). Thus, followers' self-regulatory promotion focus may inform us about which followers are in general motivated to take on leadership. Kark and van Dijk (2007) argued that formally assigned leaders are differently motivated to enact leadership depending on their trait self-regulatory focus. Particularly, they linked a self-regulatory promotion focus to leaders' affective motivation to lead, that is their leading out of enjoyment and liking to be a leader (Chan & Drasgow, 2001). Combining their reasoning with our findings on proactive followership may inform us on self-regulatory promotion focus as an individual

difference variable that explains which individuals are more likely to be intrinsically motivated to take the lead and emerge as leaders, irrespective of their formal roles.

By positioning voice as proactive followership behavior we additionally advance research on voice behavior, particularly on the outcomes of voice behavior. Literature on voice mainly focused on followers' voice as consequence of leaders' behaviors, leaving the effects followers' voice may have on leaders and their behavior behind (Ashford et al., 2009). This corresponds with past weaknesses in leadership research that mainly relied on leaders' influence on followers (Shamir, 2007). Our research addresses this gap and explores the circumstances under which followers become contributors to the leadership process. Findings emphasize followers' stable collective self-identity as boundary condition for voice to elicit favorable responses from leaders. This informs us that leaders' response to followers' voice is not solely be grounded in immediate circumstances of the proximate context (e.g., relational dynamics, performance contexts; Benson et al., 2016). Rather, leaders' interpretation of followers' situational behavior might differ depending on followers' stable orientation towards the collective. Followers' collective self-identity may thereby explain, which followers are perceived as trustworthy and reliable by their leaders and consequently receive empowerment (e.g., Han, Harold, & Cheong, 2019). Overall, our findings highlight followers' identity as a stable and personal factor impacting leaders' receptiveness to followers who voice up (Ashford et al., 2009).

Further, considering the fact that voice behavior is highly target-sensitive (Liu et al., 2010) and that voice towards leaders brings especially high risks (Detert & Burris, 2007; Detert & Edmondson, 2011) our research adds further insight into the antecedents of upward voice. Prior findings by Lin and Johnson (2015) demonstrated that daily and weekly followers' state promotion focus predicted an increase in followers' voicing out promotive ideas in the

team. We extend these findings in two main ways. Firstly, we demonstrate that followers' self-regulatory promotion focus predicts not only voicing out but also voicing up towards leaders which can be considered as an even more risky behavior. Secondly, we demonstrate that followers' self-regulatory promotion focus explains between-person differences in voice in addition to within-person variations across days and weeks. By demonstrating that it is followers' orientation towards their ideal possible selves that elicits their motivation to approach desired end-states, we also extend the findings from Kakkar et al. (2016) that studied trait approach motivation as antecedent of voicing out.

6.2 Limitations and Future Research

Despite its' contributions, our study incorporates some limitations that should be noted and that open up avenues for future research. First, our variables were all measured from the followers' perspective which raises concerns in terms of common source biases. We aimed at counteracting by separating the assessment of predictor, mediator and outcome at different points of measurement with a time lag of minimum four weeks, respectively (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003; Podsakoff, MacKenzie, & Podsakoff, 2012). However, to further reduce common source biases, we recommend the application of a full longitudinal design in which all variables are measured at multiple time points (Kline, 2015) and the use of additional rating sources (e.g., leaders' ratings of their own leadership behavior). Prior research that used multiple rating sources to assess voice and leadership behaviors mainly relied on leaders' ratings of followers' voice. Regarding our research model it could have been misleading to assess voice with leaders' ratings. The information we receive when asking leaders about followers' constructive voice is leaders' *perception* of followers' constructive voice. That perception represents a mixture of the actual extent to which followers raise their voice and the extent to

which leaders perceive followers' voice as constructive. Recent findings support that leaders' and followers' estimates on voice do not always align and followers partly estimate higher levels of voice than their leaders recognized (Burriss et al., 2013). Our goal in the current research was to study whether leaders' favorable response to voice depend on followers' stable self-identity. Our findings suggest that although followers voice up to improve rather than criticize (van Dyne & Lepine, 1998), leaders only react favorably in cases where followers incorporated strong collective self-identities. This finding suggests that leaders are not always able to recognize voice as being constructive. In order to counteract common source biases by applying multiple sources of data we thus recommend future research to assess leaders' consultation behavior or leaders' openness to consultation from the leaders' perspective, rather than assessing upward voice through leaders' perspective like prior research (e.g., Tangirala & Ramanujam, 2012; Venkataramani & Tangirala, 2010).

Second, since the relationship between followers' voicing up and leaders' consultation might be reciprocal (Tangirala & Ramanujam, 2012), we recommend the application of cross-lagged analyses in future studies. These enable to test in detail the bidirectional effects and the relative strength of directed effects between followers' voicing up and leaders' consultation. Thereby, future research could also expand their focus on other leadership behavioral or relational outcomes that have been discussed as facilitator of followers' voice and at the same time could be considered as a consequence of followers' voice. For example, leaders' empowering behavior and leader-member-exchange have been theorized as facilitators of voice and have recently been demonstrated as outcome of followers' proactive personality and followers' taking charge behavior (Han et al., 2019; Xu, Loi, Cai, & Liden, 2019).

Third, although theoretically grounded (Lord & Brown, 2004), our study did not fully explain the mechanisms *why* leaders are receptive to followers with strong collective self-identities who voice up. To disentangle the mechanisms explaining why the interaction of followers' voice and collective self-identity relates to leaders' consultation we recommend to study leaders' cognition (e.g., leaders' state self-regulatory focus, identity-level, leadership self-efficacy, trust) within this model.

Fourth, although we were interested in differences between followers' stable identity-characteristics that explain who voices up and will be consulted later on we recommend future research to explore the dynamic interplay between trait and state facets of self-concept in followership. The self-concept is also a highly dynamic set of structures that can be situationally activated (Lord & Brown, 2004; Markus & Wurf, 1987). For future research it would be interesting to study whether followers' trait self-regulatory promotion focus still predicts voicing up in contexts or during events that most likely activate a situational prevention focus in followers. As an example, an experience sampling study could examine the interplay of trait regulatory promotion focus (as a baseline assessment) with daily work events that prime a situational prevention focus in the morning (e.g., negative work events; Koopmann, Lanaj, Bono, & Campana, 2016) on promotive voicing up in the evening of that day. Results would provide insight into the relevance of dynamic versus static parts of individuals' self-concept for explaining proactive followership behavior. This further informs organizations and leaders whether and how their arrangement of work environments and tasks prompts followers to participate in the leadership process.

Further, findings of our additional analyses on the negative relationship between followers' trait self-regulatory prevention focus and prohibitive voicing up open up interesting

avenues for future research. Our findings seem to contradict prior results that demonstrated a positive relationship between the state-level of prevention focus and team members' voicing out (Lin & Johnson, 2015). At the same time, our study differs from Lin and Johnson (2015) with respect to three core aspects. First, we focused on individual differences in followers' self-regulatory focus as opposed to intra-individual fluctuations over days and weeks. Although on the short-run, dynamic variations in individuals' state prevention focus may predict prohibitive voice (Lin & Johnson, 2015), our perspective across months suggests that overall individuals with a strong self-regulatory prevention focus may be reluctant to voice concerns and the problems they anticipate. Both approaches reveal unique insights and their combination informs about qualitatively different types of associations that occur at different time scales between followers' self-regulatory focus and voice behavior (McClellan, Barnes, Courtright, & Johnson, 2019, in press; McCormick, Reeves, Downes, Li, & Ilies, 2020). Second, our study focused on voice as followership behavior as opposed to general voice. While Lin and Johnson (2015) demonstrate a positive link between prevention focus and prohibitive voice *towards peers*, our findings reveal a negative link between prevention focus and prohibitive voicing up *towards leaders*. This difference strengthens the notion that the motivation to engage in voice behavior depends on the recipient (i.e., leaders versus peers) and that voicing up towards leaders may be perceived as riskier than voicing out towards peers (Detert & Edmondson, 2011; Liu et al., 2010). Third, although both studies applied the same self-regulatory focus scale (i.e., Lockwood et al., 2002) Lin and Johnson (2015) applied a shortened version of three instead of nine items for each focus. It is common for studies on within-person fluctuations to apply shortened scales (Ohly, Sonnentag, Niessen, & Zapf, 2010; Koopmann et al., 2016), although at the same time, this cannot rule out slight differences in meaning. Dependent on the selected items, the self-

regulatory focus measure may thus either emphasize future self-representations (i.e., ideal versus ought possible selves) or thereof resulting behavioral strategies (i.e., approach or avoidant strategies for goal attainment). For future research it would be interesting to replicate our explorative findings and to examine whether the differences in results stem from qualitative differences in state versus trait regulatory focus, from the different risks associated with voicing up versus voicing out, or from differences in assessing followers' self-regulatory focus.

6.3 Practical Implications

According to our findings, organizations who seek followers that actively contribute to the leadership process could consider selecting employees with a strong self-regulatory promotion focus. In addition, organizations may support followers' voice and its' effectiveness by creating work environments that emphasize a promotion focus (e.g., providing benefits for suggestions of innovative ideas, emphasizing progress and fast learning) and collective self-identities (e.g., shared activities, slogans emphasizing the "we-ness"). The benefits of work environments that correspond with a promotion focus as well as with a collective self-identity are twofold. At the one hand they strengthen individuals' congruent pre-existing components of the stable self-concept (e.g., regulatory fit; Higgins, 2005). On the other hand they heighten the accessibility that individuals act in concordance with situationally activated malleable identity-components (Lord, Gatti, & Chui, 2016).

Considering our findings that leaders respond more favorably to voice from followers with strong collective identities, we recommend development programs for leaders that sensitize them towards evaluating ideas and suggestions regardless of where they come from. Training programs may support leaders in differentiating between voice that is helpful at the present point in time and voice that is not, irrespective of who voices the idea. Doing so may prevent leaders

from not listening to relevant ideas raised by followers with weak collective identities. In the end leaders' openness to any issues raised by followers represents a central premise to achieve desired innovative outcomes.

7. Conclusion

The current research applies a role-based followership approach (Uhl-Bien et al., 2014) and derives from self-concept approaches to leadership (Lord & Brown, 2004) to shed light on followers' voice as proactive followership behavior. Findings demonstrate that for followers with strong collective self-identities, a trait self-regulatory promotion predicted leaders' consultation behavior two months later through followers' promotively voicing up. Overall, findings emphasize followers' stable self-concept as powerful motivational force to engage in the leadership process and, furthermore, as premise for leaders' subsequent consultation with followers.

8. References

- Ashford, S. J., Sutcliffe, K. M., & Christianson, M. K. (2009). Speaking up and speaking out: The leadership dynamic in organizations. In Greenberg, Jerald & M. S. Edwards (Eds.), *Voice and Silence in Organizations* (pp. 175–202). Bingley, UK: Emerald Group Pub. Ltd.
- Bastardoz, N., & van Vugt, M. (2018). The nature of followership: Evolutionary analysis and review. *The Leadership Quarterly*, 81–95.
- Becker, T. E., Atinc, G., Breugh, J. A., Carlson, K. D., Edwards, J. R., & Spector, P. E. (2016). Statistical control in correlational studies: 10 essential recommendations for organizational researchers. *Journal of Organizational Behavior*, 37(2), 157–167.
- Benson, A. J., Hardy, J., & Eys, M. (2016). Contextualizing leaders' interpretations of proactive followership. *Journal of Organizational Behavior*, 37(7), 949–966.
- Braun, S., Peus, C., & Frey, D. (2018). Connectionism in action: Exploring the links between leader prototypes, leader gender, and perceptions of authentic leadership. *Organizational Behavior and Human Decision Processes*, 149, 129–144.
- Brewer, M., & Gardner, W. L. (1996). Who is this “we”? Levels of collective identity and self representations. *Journal of Personality and Social Psychology*, 71(1), 83–93.
- Brislin, R. W. (1970). Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology*, 1(3), 185–216.
- Brockner, J., & Higgins, E. T. (2001). Regulatory focus theory: Implications for the study of emotions at work. *Organizational Behavior and Human Decision Processes*, 86(1), 35–66.
- Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon's Mechanical Turk: A new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science*, 6(1), 3–5.
- Burris, E. R. (2012). The risks and rewards of speaking up: Managerial responses to employee voice. *Academy of Management Journal*, 55(4), 851–875.
- Burris, E. R., Detert, J. R., & Romney, A. C. (2013). Speaking up vs. being heard: The disagreement around and outcomes of employee voice. *Organization Science*, 24(1), 22–38.
- Carsten, M. K., & Uhl-Bien, M. (2012). Follower beliefs in the co-production of leadership. *Zeitschrift für Psychologie / Journal of Psychology*, 220(4), 210–220.
- Carsten, M. K., Uhl-Bien, M., & Huang, L. (2018). Leader perceptions and motivation as outcomes of followership role orientation and behavior. *Leadership*, 14(6), 731–756.

- Carsten, M. K., Uhl-Bien, M., West, B. J., Patera, J. L., & McGregor, R. (2010). Exploring social constructions of followership: A qualitative study. *The Leadership Quarterly*, *21*(3), 543–562.
- Chamberlin, M., Newton, D. W., & Lepine, J. A. (2017). A meta-analysis of voice and its promotive and prohibitive forms: Identification of key associations, distinctions, and future research directions. *Personnel Psychology*, *70*(1), 11–71.
- Chan, K.-Y., & Drasgow, F. (2001). Toward a theory of individual differences and leadership: Understanding the motivation to lead. *Journal of Applied Psychology*, *86*(3), 481–498.
- Chang, C.-H., & Johnson, R. (2010). Not all leader-member exchanges are created equal: Importance of leader relational identity. *The Leadership Quarterly*, *21*(5), 796–808.
- Cheung, J. H., Burns, D. K., Sinclair, R. R., & Sliter, M. (2017). Amazon mechanical turk in organizational psychology: An evaluation and practical recommendations. *Journal of Business and Psychology*, *32*(4), 347–361. <https://doi.org/10.1007/s10869-016-9458-5>
- Chrobot-Mason, D., Gerbasi, A., & Cullen-Lester, K. L. (2016). Predicting leadership relationships: The importance of collective identity. *The Leadership Quarterly*, *27*(2), 298–
- Crowe, E., & Higgins, E. T. (1997). Regulatory focus and strategic inclinations: Promotion and prevention in decision-making. *Organizational Behavior and Human Decision Processes*, *69*(2), 117–132.
- Curran, P. G. (2016). Methods for the detection of carelessly invalid responses in survey data. *Journal of Experimental Social Psychology*, *66*, 4–19.
- Day, D. V. (2014). Introduction: Leadership and organizations. In D. V. Day (Ed.), *The Oxford handbook of leadership and organizations* (pp. 3–12). New York, NY: Oxford Library of Psychology.
- Delegach, M., Kark, R., Katz-Navon, T., & van Dijk, D. (2017). A focus on commitment: The roles of transformational and transactional leadership and self-regulatory focus in fostering organizational and safety commitment. *European Journal of Work and Organizational Psychology*, *26*(5), 724–740.
- DeRue, D. S., & Ashford, S. J. (2010). Who will lead and who will follow? A social process of leadership identity construction in organizations. *Academy of Management Review*, *35*(4), 627–647.
- DeSimone, J., Harms, P. D., & DeSimone, A. (2015). Best practice recommendations for data screening. *Journal of Organizational Behavior*, *36*(2), 171–181.

- Detert, J. R., & Burris, E. R. (2007). Leadership behavior and employee voice: Is the Door Really Open? *Academy of Management Journal*, *50*(4), 869–884.
- Detert, J. R., Burris, E. R., Harrison, D. A., & Martin, S. (2013). Voice flows to and around leaders: Understanding when units are helped or hurt by employee voice. *Administrative Science Quarterly*, *58*(4), 624–668.
- Detert, J. R., & Edmondson, A. (2011). Implicit voice theories: Taken-for-granted rules of self-censorship at work. *Academy of Management Journal*, *54*(3), 461–488.
- Edmondson, A. (2003). Speaking up in the operating room: How team leaders promote learning in interdisciplinary action teams. *Journal of Management Studies*, *40*(6), 22–2380.
- Ferris, L., Johnson, R., & Sedikides, C. (2017). The self at work: An overview. In L. Ferris, R. E. Johnson, & C. Sedikides (Eds.), *The self at work:: Fundamental theory and research* (pp. 1–12). New York: Taylor & Francis.
- Fleischer, A., Mead, A. D., & Huang, Jialin. (2015). Inattentive Responding in MTurk and Other Online Samples. *Industrial and Organizational Psychology*, *8*(2), 196–202.
- Gorman, C. A., Meriac, J. P., Overstreet, B. L., Apodaca, S., McIntyre, A. L., Park, P., & Godbey, J. N. (2012). A meta-analysis of the regulatory focus nomological network: Work-related antecedents and consequences. *Journal of Vocational Behavior*, *80*(1), 160–172.
- Graen, G. B., & Uhl-Bien, M. (1995). Relationship-based approach to leadership: Development of leader-member exchange (LMX) theory of leadership over 25 years: Applying a multi-level multi-domain perspective. *The Leadership Quarterly*, *6*(2), 219–247.
- Grant, A. M., Parker, S. K., & Collins, C. G. (2009). Getting credit for proactive behavior: Supervisor reactions depend on what you value and how you feel. *Personnel Psychology*, *62*(1), 31–55.
- Hamstra, M. R. W., Bolderdijk, J. W., & Veldstra, J. L. (2011). Everyday risk taking as a function of regulatory focus. *Journal of Research in Personality*, *45*(1), 134–137.
- Han, S., Harold, C. M., & Cheong, M. (2019). Examining why employee proactive personality influences empowering leadership: The roles of cognition- and affect-based trust. *Journal of Occupational and Organizational Psychology*, *92*(2), 352–383.
- Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (2nd ed.). New York, NY: Guildford Press.

- Higgins, E. T. (1987). Self-discrepancy: A Theory Relating Self and Affect. *Psychological Bulletin*, 94(3), 319–340.
- Higgins, E. T. (1997). Beyond pleasure and pain. *American Psychologist*, 52(12), 1280–1300.
- Higgins, E. T. (1998). Promotion and prevention regulatory focus as a motivational principle. In M. P. Zanna (Ed.), *Advances in Experimental Social Psychology* (Vol. 30, pp. 1–47). San Diego, California: Academic Press.
- Higgins, E. T. (2005). Value from regulatory fit. *Current Directions in Psychological Science*, 14(4), 209–213.
- Higgins, E. T. (2014). Promotion and prevention: How “0” can create dual motivational forces. In J. W. Sherman, B. Gawronski, & Y. Trope (Eds.), *Dual-Process Theories of the Social Mind* (pp. 423–435). New York, NY: Guilford Press.
- Hollander, E. P. (1992). Leadership, followership, self, and others. *The Leadership Quarterly*, 3(1), 43–54.
- Hu, L., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological Methods*, 3(4), 424–453.
<https://doi.org/10.1037//1082-989X.3.4.424>
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1–55.
- Huang, Jason, Curran, P. G., Keeney, J., Poposki, E. M., & DeShon, R. P. (2012). Detecting and deterring insufficient effort responding to surveys. *Journal of Business and Psychology*, 27(1), 99–114.
- Huang, Jason, Liu, M., & Bowling, N. A. (2015). Insufficient effort responding: Examining an insidious confound in survey data. *Journal of Applied Psychology*, 100(3), 828–845.
- Huang, X., Xu, E., Huang, L., & Liu, W. (2018). Nonlinear consequences of promotive and prohibitive voice for managers’ responses: The roles of voice frequency and LMX. *The Journal of Applied Psychology*, 103(10), 1101–1120.
- Jackson, C. L., Colquitt, J. A., Wesson, M. J., & Zapata-Phelan, C. P. (2006). Psychological collectivism: A measurement validation and linkage to group member performance. *The Journal of Applied Psychology*, 91(4), 884–899.

- Johnson, J. (2005). Ascertaining the validity of individual protocols from Web-based personality inventories. *Journal of Research in Personality, 39*(1), 103–129.
- Johnson, R., Chang, C.-H., & Rosen, C. C. (2010). “Who I am depends on how fairly I’m treated”: Effects of justice on self-identity and regulatory focus. *Journal of Applied Social Psychology, 40*(12), 3020–3058.
- Johnson, R., King, D. D., Lin, S.-H., Scott, B. A., Walker, E. M. J., & Wang, M. (2017). Regulatory focus trickle-down: How leader regulatory focus and behavior shape follower regulatory focus. *Organizational Behavior and Human Decision Processes, 140*, 29–45.
- Johnson, R., & Lord, R. G. (2010). Implicit effects of justice on self-identity. *Journal of Applied Psychology, 95*(4), 681–695.
- Johnson, R., Venus, M., Lanaj, K., Mao, C., & Chang, C.-H. (2012). Leader identity as an antecedent of the frequency and consistency of transformational, consideration, and abusive leadership behaviors. *Journal of Applied Psychology, 97*(6), 1262–1272.
- Kakkar, H., Tangirala, S., Srivastava, N. K., & Kamdar, D. (2016). The dispositional antecedents of promotive and prohibitive voice. *Journal of Applied Psychology, 101*(9), 1342–1351.
- Karasek, R. (1979). Job demands, Job decision latitude, and mental strain: Implications for job redesign. *Administrative Science Quarterly, 24*(2), 285–308.
- Kark, R., Katz-Navon, T., & Delegach, M. (2015). The dual effects of leading for safety: The mediating role of employee regulatory focus. *Journal of Applied Psychology, 100*(5), 1332–1348.
- Kark, R., & van Dijk, D. (2007). Motivation to lead, motivation to follow: The role of self-regulatory focus in leadership processes. *Academy of Management Review, 32*(2), 500–528.
- Kashima, Y., Yamaguchi, S., Kim, U., Choi, S.-S., Gelfand, M. J., & Yuki, M. (1995). Culture, gender, and self: A perspective from individualism-collectivism research. *Journal of Personality and Social Psychology, 69*(5), 925–937.
- Keller, J., & Bless, H. (2006). Regulatory fit and cognitive performance: The interactive effect of chronic and situationally induced self-regulatory mechanisms on test performance. *European Journal of Social Psychology, 36*(3), 393–405.
- Kim, H., & Yukl, G. (1995). Relationships of managerial effectiveness and advancement to self-reported and subordinate-reported leadership behaviors from the multiple-linkage mode. *The Leadership Quarterly, 6*(3), 361–377.

- Kline, R. B. (2015). The mediation myth. *Basic and Applied Social Psychology*, 37, 202–213.
- Koopmann, J., Johnson, R., Wang, M., Lanaj, K., Wang, G., & Shi, J. (2019). A self-regulation perspective on how and when regulatory focus differentially relates to citizenship behaviors. *Journal of Applied Psychology*, 104(5), 629–641.
- Koopmann, J., Lanaj, K., Bono, J., & Campana, K. (2016). Daily shifts in regulatory focus: The influence of work events and implications for employee well-being. *Journal of Organizational Behavior*, 37(8), 1293–1316.
- Lanaj, K., Chang, C.-H., & Johnson, R. (2012). Regulatory focus and work-related outcomes: A review and meta-analysis. *Psychological Bulletin*, 138(5), 998–1034.
- Landers, R. N., & Behrend, T. S. (2015). An inconvenient truth: Arbitrary Distinctions Between Organizational, Mechanical Turk, and other convenience samples. *Industrial and Organizational Psychology*, 8(2), 142–164.
- Leikas, S., Lönnqvist, J.-E., Verkasalo, M., & Lindeman, M. (2009). Regulatory focus systems and personal values. *European Journal of Social Psychology*, 39(3), 415–429.
- Li, G., Liu, H., Shang, Y., & Xi, Y. (2014). Leader feedback and knowledge sharing: A regulatory focus theory perspective. *Journal of Management & Organization*, 20(6), 749–763.
- Liang, J., Farh, C., & Farh, J.-L. (2012). Psychological antecedents of promotive and prohibitive voice: A two-wave examination. *Academy of Management Journal*, 55(1), 71–92.
- Liberman, N., Idson, L. C., Camacho, C. J., & Higgins, E. T. (1999). Promotion and prevention choices between stability and change. *Journal of Personality and Social Psychology*, 77(6), 1135–1145.
- Lin, S.-H., & Johnson, R. (2015). A suggestion to improve a day keeps your depletion away: Examining promotive and prohibitive voice behaviors within a regulatory focus and ego depletion framework. *Journal of Applied Psychology*, 100(5), 1381–1397.
- Liu, W., Zhu, R., & Yang, Y. (2010). I warn you because I like you: Voice behavior, employee identifications, and transformational leadership. *The Leadership Quarterly*, 21(1), 189–202.
- Lockwood, P., Jordan, C. H., & Kunda, Z. (2002). Motivation by positive or negative role models: Regulatory focus determines who will best inspire us. *Journal of Personality and Social Psychology*, 83(4), 854–864.
- Lord, R. G. (2008). Followers' cognitive and affective structures and leadership processes. In R. E. Riggio, I. Chaleff, & J. Lipman-Blumen (Eds.), *The Art of Followership: How Great*

- Followers Create Great Leaders and Organizations* (pp. 255–266). San Francisco, CA: Jossey-Bass.
- Lord, R. G., & Brown, D. J. (2004). *Leadership Processes and Follower Self-Identity*. Mahwah, New Jersey: Lawrence Erlbaum Associates Publishers.
- Lord, R. G., Brown, D. J., & Freiberg, S. J. (1999). Understanding the dynamics of leadership: The role of follower self-concepts in the leader/follower relationship. *Organizational Behavior and Human Decision Processes*, 78(3), 167–203.
- Lord, R. G., & Chui, Susanna L. M. (2017). Dual process models of self-schemas and identity: Implication for leadership and followership processes. In L. Ferris, R. E. Johnson, & C. Sedikides (Eds.), *The Self at Work:: Fundamental Theory and Research*. New York: Taylor & Francis.
- Lord, R. G., Gatti, P., & Chui, Susanna L.M. (2016). Social-cognitive, relational, and identity-based approaches to leadership. *Organizational Behavior and Human Decision Processes*, 136, 119–134.
- Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist*, 41(9), 954–969. <https://doi.org/10.1037//0003-066X.41.9.954>
- Markus, H., & Wurf, E. (1987). The dynamic self-concept: A social psychological perspective. *Annual Review of Psychology*, 38, 299–337.
- McClean, S. T., Barnes, C. M., Courtright, S. H., & Johnson, R. (2019, in press). Resetting the clock on dynamic leader behaviors: A conceptual integration and agenda for future research. *Academy of Management Annals*, 13(2), 479-508.
- McCormick, B. W., Reeves, C. J., Downes, P. E., Li, N., & Ilies, R. (2020). Scientific contributions of within-person research in management: Making the juice worth the squeeze. *Journal of Management*, 46(2), 321-350.
- Meade, A. W., & Craig, S. B. (2012). Identifying careless responses in survey data. *Psychological Methods*, 17(3), 437–455.
- Milliken, F. J., Morrison, E. W., & Hewling, P. F. (2003). An exploratory study of employee silence: Issues that employees don't communicate upward and why. *Journal of Management Studies*, 40(6), 1453–1476.

- Molden, D. C., & Winterheld, H. A. (2013). Motivations for promotion and prevention in close relationships. In J. A. Simpson & L. Campbell (Eds.), *The Oxford Handbook of Close Relationships* (pp. 321–347). New York: Cambridge University Press.
- Morrison, E. W. (2014). Employee voice and silence. *Annual Review of Organizational Psychology and Organizational Behavior*, 1(1), 173–197.
- Morrison, E. W., & Milliken, F. J. (2000). Organizational silence: A barrier to change and development in a pluralistic world. *The Academy of Management Review*, 25(4), 706–725.
- Morrison, E. W., & Rothman, N. B. (2009). Silence and the dynamics of power. In Greenberg, Jerald & M. S. Edwards (Eds.), *Voice and Silence in Organizations* (pp. 111–133). Bingley, UK: Emerald Group Pub. Ltd.
- Neff, A., Niessen, C., Sonnentag, S., & Unger, D. (2013). Expanding crossover research: The crossover of job-related self-efficacy within couples. *Human Relations*, 66(6), 803–827.
- Nye, C. D., & Drasgow, F. (2011). Assessing goodness of fit: Simple rules of thumb simply do not work. *Organizational Research Methods*, 14(3), 548–570.
- Oc, B., & Bashshur, M. R. (2013). Followership, leadership and social influence. *The Leadership Quarterly*, 24(6), 919–934.
- Ohly, S., Sonnentag, S., Niessen, C., & Zapf, D. (2010). Diary Studies in Organizational Research. *Journal of Personnel Psychology*, 9(2), 79–93.
- Pachler, D., Kuonath, A., Specht, J., Kennecke, S., Agthe, M., & Frey, D. (2018). Workflow interruptions and employee work outcomes: The moderating role of polychronicity. *Journal of Occupational Health Psychology*, 23(3), 417–427.
- Podsakoff, P., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903.
- Podsakoff, P., MacKenzie, S. B., & Podsakoff, N. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology*, 63, 539–569.
- Schyns, B. (2002). Überprüfung einer deutschsprachigen Skala zum Leader-Member-Exchange-Ansatz. *Zeitschrift für Differentielle und Diagnostische Psychologie*, 23(2), 235–245.

- Seibert, S. E., Kraimer, M. L., & Crant, J. M. (2001). What do proactive people do?: A longitudinal model linking proactive personality and career success. *Personnel Psychology*, *54*(4), 845–874.
- Selenta, C., & Lord, R. G. (2005). Development of the levels of self-concept scale: Measuring the individual, relational, and collective levels (Unpublished manuscript). University of Akron, Akron, OH.
- Shamir, B. (2007). From passive recipients to active co-producers: Followers' roles in the leadership process. In B. Shamir, R. Pillai, M. C. Bligh, & M. Uhl-Bien (Eds.), *Leadership horizons. Follower-centered perspectives on leadership: A tribute to the memory of James R. Meindl* (pp. ix–xxxix). Greenwich, CT: Information Age Publishing Inc.
- Tangirala, S., & Ramanujam, R. (2012). Ask and you shall hear (but not always): Examining the relationship between manager consultation and employee voice. *Personnel Psychology*, *65*, 251–282.
- Thomas, G., Martin, R., Epitropaki, O., Guillaume, Y., & Lee, A. (2013). Social cognition in leader-follower relationships: Applying insights from relationship science to understanding relationship-based approaches to leadership. *Journal of Organizational Behavior*, *34*(S1), S63–S81.
- Uhl-Bien, M., & Carsten, M. K. (2018). Reversing the lens in leadership: Positioning followership in the leadership construct. In I. Katz, G. Eilam-Shamir, R. Kark, & Y. Berson (Eds.), *Monographs in Leadership and Management. Leadership now: Remembering the legacy of Boas Shamir* (Vol. 9, pp. 195–222). London: Emerald Group Pub. Ltd.
- Uhl-Bien, M., Riggio, R. E., Lowe, K. B., & Carsten, M. K. (2014). Followership theory: A review and research agenda. *The Leadership Quarterly*, *25*(1), 83–104.
- Van Dyne, L., & Lepine, J. A. (1998). Helping and voice extra-role behaviors: Evidence of construct and predictive validity. *Academy of Management Journal*, *41*(1), 108–119.
- Van Knippenberg, D., van Knippenberg, B., De Cremer, D., & Hogg, M. A. (2004). Leadership, self, and identity: A review and research agenda. *The Leadership Quarterly*, *15*(6), 825–856.
- Van Quaquebeke, N., van Knippenberg, D., & Brodbeck, F. C. (2011). More than meets the eye: The role of subordinates' self-perceptions in leader categorization processes. *The Leadership Quarterly*, *22*(2), 367–382.

- Venkataramani, V., & Tangirala, S. (2010). When and why do central employees speak up? An examination of mediating and moderating variables. *The Journal of Applied Psychology*, 95(3), 582–591.
- Walter, S. L., Seibert, S. E., Goering, D., & O’Boyle, E. H. (2018). A Tale of two sample sources: Do results from online panel data and conventional data converge? *Journal of Business and Psychology*, Advance online publication.
- Whiting, S. W., Maynes, T. D., Podsakoff, N., & Podsakoff, P. (2012). Effects of message, source, and context on evaluations of employee voice behavior. *Journal of Applied Psychology*, 97(1), 159–182.
- Whiting, S. W., Podsakoff, P., & Pierce, J. R. (2008). Effects of task performance, helping, voice, and organizational loyalty on performance appraisal ratings. *The Journal of Applied Psychology*, 93(1), 125–139.
- Winterheld, H. A., & Simpson, J. A. (2011). Seeking security or growth: A regulatory focus perspective on motivations in romantic relationships. *Journal of Personality and Social Psychology*, 101(5), 935–954.
- Winterheld, H. A., & Simpson, J. A. (2016). Regulatory focus and the interpersonal dynamics of romantic partners’ personal goal Discussions. *Journal of Personality*, 84(3), 277–290.
- Xu, A., Loi, R., Cai, Z., & Liden, R. C. (2019). Reversing the lens: How followers influence leader–member exchange quality. *Journal of Occupational and Organizational Psychology*, 87(1), Advanced online publication.
- Yukl, G., & Fu, P. P. (1999). Determinants of delegation and consultation by managers. *Journal of Organizational Behavior*, 20, 219–232.
- Yukl, G., Wall, S., & Lepsinger, R. (1990). Preliminary report on validation of the managerial practices survey. In K. E. Clark & M. B. Clark (Eds.), *Measures of Leadership* (pp. 223–238). West Orange, NJ: Leadership Library of America

PART II

**COGNITIVE STRUCTURES THAT DRIVE PERCEPTIONS OF SHARED LEADERSHIP:
A QUALITATIVE NETWORK STUDY**

Part II:

Cognitive structures that drive perceptions of shared leadership:

A qualitative network study

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Note.

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1. Abstract

The current research explores how team members' perceptions of shared leadership are grounded in a cognitive representation of relational processes that take place at multiple levels within teams. By applying a qualitative constructivist perspective, we studied 37 semi-structured interviews with members from 11 entrepreneurial teams. Data were analyzed with an inductive coding procedure derived from Grounded Theory (Charmaz, 2014; Corbin & Strauss, 2015) and subsequent qualitative network analysis (Pokorny et al., 2018). Our inductive coding procedure identified 23 relational processes at three levels (i.e., processes at the individual level, team level, and in linkage with managerial leadership) that drive team members' experience of shared leadership. With qualitative network analysis we explored how these relational processes are organized in a network structure, revealing their relative importance as well as their strong associations and community structures within and across levels. With our findings we develop the theoretical understanding of shared leadership as relational and multi-level phenomenon from the perspective of the Connectionist Model of Leadership Perceptions (Lord, Brown, Harvey, & Hall, 2001).

Keywords: shared leadership, connectionism, multi-level, leadership perceptions, relational leadership, qualitative network analysis

2. Introduction & Theoretical Background

Leadership emerges as a “multilevel interactional process driven by deep level cognitive and perceptual processes of group members that form a collective patterning of leader and follower interactions over time” (Acton, Foti, Lord, & Gladfelter, 2019, p. 146). In that sense, leadership is a process of social information processing that emerges from cognitive and social dynamics within and between individuals. Due to its’ emergent nature, leadership is adaptable to complex environmental demands that require the integration of perceptions of multiple actors (Acton et al., 2019; Lord & Shondrick, 2011). This integration is at the heart of collective forms of leadership (Denis, Langley, & Sergi, 2012).

Shared leadership, one form of leadership in the collective, has been defined as the “dynamic, interactive influence process among individuals in groups for which the objective is to lead one another to the achievement of group or organizational goals or both” (Pearce & Conger, 2003, p. 1). Building on this definition, we consider shared leadership as a social-cognitive phenomenon that is (a) relational and (b) multi-level in nature. Shared leadership is relational as it is co-produced by multiple individuals and their perceptions of and reactions to each other in social interactions. Shared leadership is a multi-level phenomenon as the formal and informal relational processes that underly it manifest at the individual and the team level (Friedrich, Vessey, Schuelke, Ruark, & Mumford, 2009; Scott, Jiang, Wildman, & Griffith, 2018). In order to understand shared leadership as an emergent phenomenon it is central to understand team members’ social-cognitive processes underlying it. The objective of the current research is therefore to explore how team members’ perceptions of shared leadership are grounded in a cognitive representation of relational processes that manifest at multiple levels within teams.

2.1 Information Processing Approaches to Leadership

In teams, leadership and followership are perceptual and behavioral social constructs (Shondrick & Lord, 2010). Team members fulfill the “active, constructive role of perceivers in the social influence process that is at the heart of leadership” (Foti, Hansbrough, Epitropaki, & Coyle, 2017, p. 261). Individuals generally hold relatively stable cognitive structures about leadership and followership that develop through repeated experiences over time (Implicit Leadership and Followership Theories; Epitropaki, Sy, Martin, Tram-Quon, & Topakas, 2013; Shondrick & Lord, 2010). These cognitive structures summarize a set of typical attributes, traits and behaviors that distinguish perceptions of leaders from non-leaders or followers from non-followers (Foti et al., 2017). Their activation influences how leadership in social interactions is encoded and how one reacts to potential leaders (Lord et al., 2001). The process of perceiving someone as leader or follower is based on two steps, where top-down cognitive structures are matched with situational bottom-up input (Grossberg, 1999). Once a match is successful, that is, perceptions of leadership or followership have been formed, the activated cognitive structures shape how team members react in interpersonal interactions.

More recently, scholars acknowledged the dynamic and fluid nature of leadership and followership perceptions (Epitropaki & Martin, 2005; Foti et al., 2017; Shondrick, Dinh, & Lord, 2010; Shondrick & Lord, 2010). As an advancement of Implicit Leadership and Followership Theories, the connectionist perspective (Lord et al., 2001) emphasizes cognitive network structures as core explanation for the flexibility in leadership categories within and between individuals (Epitropaki et al., 2013). Cognitive network structures are “networks of neuron-like processing units that continuously integrate information from input sources and pass activation (or inhibition) to connected (output) units” (p. 314).

2.2 The Dynamic Nature of Leadership Perceptions

Considering shared leadership, team members' cognitive structures have been said to be adaptive and dynamic (Lord & Shondrick, 2011; Shondrick et al., 2010). The underlying cognitive network structures develop through team members' repeated experiences of shared leadership. Team members take on leadership roles and responsibilities in one situation or at one point in time, while taking on followership roles and responsibilities in others (Scott et al., 2018).

The switching of roles and responsibilities requires adaptability in perceiving leadership and followership in oneself and others. In order to dynamically perceive themselves and others as leaders and followers, team members need to process multiple relational cues that occur simultaneously and that signal the switching of roles and responsibilities at a given point in time (Foti et al., 2017; Foti, Knee, & Backert, 2008; Shondrick et al., 2010). The dynamically changing experiences of oneself and others as leaders and followers shape mental representations of leadership and followership. Over time, these experiences render individuals more likely to flexibly adopt their leadership and followership schema to situational and contextual demands.

Although scholars have begun to discuss the flexible cognitive network structures required for shared leadership (Lord & Shondrick, 2011; Shondrick et al., 2010), empirical research in this domain remains scarce (Denis et al., 2012). The current research fills this gap and explores how team members' perceptions of shared leadership are grounded in a cognitive representation of relational processes involved in shared leadership. We apply a qualitative-constructivist approach and adopt principles from the Connectionist Model of Leadership Perceptions (Lord et al., 2001) to address the following research question: How are team members' perceptions of shared leadership as a relational and multilevel phenomenon cognitively represented? By exploring how perceptions of shared leadership are cognitively

represented by a network of relational processes that span across individual level, team level and across formal manager's leadership we contribute to an advanced understanding of shared leadership as a social-cognitive phenomenon.

2.2.1 Connectionist Model of Leadership Perceptions

Connectionist models explain “how information from many sources [...] can be combined simultaneously to create contextually sensitive leadership categories” (Lord et al., 2001, p. 313). In these models, knowledge is stored across units that are interconnected with each other in a complex network (Hanges, Lord, & Dickson, 2000; Lord et al., 2001). These interconnected units transfer activation (or inhibition) between each other to create positive (negative) constraints. The amount of activation (inhibition) that is transferred depends on both the activation of the precedent unit and the strength of the connection between the two units. The cognitive structures associated with leadership perceptions are represented by a distributed pattern of connections within the network. Cognitive structures emerge as stable schemas when constraints among the network's units are learned through experience over time and change slowly (Lord et al., 2001; Shondrick et al., 2010; Shondrick & Lord, 2010).

Connectionist networks consist of higher and lower level units that play together in determining the flexibility in cognitive structures (Lord et al., 2001). Lower-level units refer to the input received (e.g., a team member's behavior). Higher-level units refer to contextual constraints from external (e.g., the situation) and internal context (e.g., perceiver's goals, self-views). The learned strengths of lower-level connections between the network's units remain fairly stable, however the higher-order activation pattern across units changes in response to different constraints (Shondrick & Lord, 2010). Thus, although team members regularly engage in the same repertoire of relational processes (i.e., units) that relate to leadership perceptions, the

shifting combinations of these relational processes (i.e., the higher-order activated pattern) may evoke different cognitive structures that guide team members' perceptions of leadership.

We argue that connectionist models can account for the multi-level nature of shared leadership. Connectionist networks “articulate how the individual and collective structures created by different patterns of external constraints can create multilevel organizational phenomena“ (Lord et al., 2001, p. 325). The relational processes involved in shared leadership manifest formally and informally across multiple levels (Friedrich et al., 2009; Scott et al., 2018). For example, at the individual level team members may become aware of collaborative skills as critical leadership qualities (Shondrick et al., 2010). At the team level, team members' mutual trust may enable their sharing of leadership and, regarding formal leadership, team managers' behavior may foster trust in each other and individuals' awareness of their leadership skills. Although these examples of relational processes associated with shared leadership manifest at different levels they may all represent contextual constraints, that “merely by their presence [...] can act either to increase or decrease the activation of each of the elements [in a connectionist network]” (Lord et al., 2001, p. 320).

2.2.2 Cognitive Structures Underlying Perceptions of Shared Leadership.

Capturing the cognitive structures that underlie team members' perceptions of shared leadership is challenging (Shondrick & Lord, 2010). Traditional measures that rely on questionnaire instruments are prone to biases as they require participants to make generalized judgements on the occurrence and nature of leadership behaviors (Cook, Zill, & Meyer, 2019; Hansbrough, Lord, & Schyns, 2015). For these judgements, participants most likely draw on the stable and decontextualized knowledge they hold about leadership (Rush, Thomas, & Lord, 1977; Shondrick et al., 2010).

However, exploring the deeper cognitive structures that drive team members' perceptions of shared leadership requires the retrieval of context-dependent knowledge. In shared leadership, the pattern of behaviors and related perceptions is different from one leader to another. Leadership perceptions are thus no longer contingent on the encoding of stable person categories, but rather on encoding schemas that focus on team members' perceptions of relational activities in specific situations. This kind of knowledge is stored in episodic memory. Episodic memories are closely associated with specific events, their emotional impact and the spatial representations of the self in relation to others (Allen, Kaut, & Lord, 2008; Shondrick et al., 2010).

2.3 The Current Research

With the current research we explore how the relational and multi-level processes involved in team members' perceptions of shared leadership are cognitively represented. We propose that team members' perceptions of shared leadership and the underlying cognitive network structure can be explored through qualitative research approaches. Memory retrieval works best, when retrieval cues match encoding cues (Shondrick et al., 2010). In other words, creating situations that parallel those where knowledge about leadership was acquired, helps participants to accurately remember. In this regard, qualitative approaches can bring to life how team members experienced shared leadership in a particular context and provide insight into the relational processes and cognitive structures underlying leadership (Bryman, 2004; Uhl-Bien, 2006). For this purpose, we adopt a qualitative approach and adhered to highest standards for the transparency and replicability of qualitative data analysis (Aguinis & Solarino, 2019).

With the current research we contribute to the extant literature in the following three ways. First, we uncover what has been claimed to be of essential relevance for a better theoretical and practical understanding of shared leadership: The cognitive representation of the

relational processes that underlie team members' perceptions of shared leadership (Denis et al., 2012). Although collective forms of leadership gain increasing attention in leadership research and organizational practice, empirical insights that explain how shared leadership can be understood from a social-cognitive perspective lack behind. We concur with Shondrick et al. (2010) and suggest that the cognitive network underlying shared leadership reflects evolving relationships and depend upon the relational processes that happen *between* team members. With our research we explore the cognitive structures associated with team members' perceptions of shared leadership. This approach with a focus on perceptions that build on team members' experiences of leadership advances the theoretical understanding of shared leadership as an emergent and relational phenomenon driven by the cognitive and perceptual processes of team members (Acton et al., 2019).

Second, we address the call by Shondrick et al. (2010) for leadership research to develop approaches that move beyond assessing solely individuals' semantic knowledge to more context dependent and episodic experiences. For this purpose, we apply a novel methodological approach, qualitative network analysis (Pokorny et al., 2018) to measuring shared leadership as a social-cognitive process. Specifically, we explored team members' past experiences of shared leadership by conducting semi-structured interviews, which we then analyzed in a two-step procedure of iterative double coding (Charmaz, 2014; Corbin & Strauss, 2015) and subsequent qualitative network analysis (Pokorny et al., 2018). With interviews we led participants to describe in detail their experiences of shared leadership within the context of creative team work. Thereby, team members detailed their experience of specific event and the associated relationships, behaviors and emotions. This may create a vivid re-experience for team members and increases the accuracy of their retrospective descriptions of shared leadership (Foti et al.,

2017; Hansbrough et al., 2015; Shondrick et al., 2010). By applying iterative coding procedures to the interview data, we reveal the relational processes that become apparent when team members describe their past experiences of shared leadership. These processes in turn form the basis for the cognitive network underlying perceptions of shared leadership. Subsequent qualitative network analysis reveals how team members' perceptions of shared leadership are structured in a network that represents strong associations and communities of these relational processes within and across levels.

Third, we explicitly address the multi-level nature of shared leadership. Leadership in general and shared leadership in particular have been described as processes that are relational, situated within context, and can be both formal and informal (Carter, DeChurch, Braun, & Contractor, 2015; Friedrich et al., 2009; Scott et al., 2018). To understand the cognitive structures that underly shared leadership at multiple levels we analyze the interview data with a focus on relational processes that manifest at the individual level, the team level, and linked with formal manager's leadership. By subsequently applying qualitative network analysis to the coded data we reveal how these relational processes interplay to form strong associations with each other within and across levels.

3. Methods

The purpose of the study was to explore how team members' perceptions of shared leadership result from multiple relational processes in teams that are cognitively represented in a network structure. Following a qualitative approach of social constructivism, we understand shared leadership as a social reality that is construed by multiple team members that perceive and react to each other. How the resulting relational processes are cognitively represented may be not consciously accessible from the team members who are involved in (Nisbett & Wilson, 1977).

However, team members' "internal" processes are influenced and shaped by their social relations and the relational processes they engage in (Bouwen & Hosking, 2000). To generate insight into team members' cognitive structures underlying perception of shared leadership we apply Grounded Theory (Charmaz, 2014; Corbin & Strauss, 2015) and subsequent qualitative network analysis (Pokorny et al., 2018).

Grounded Theory is well suited to explore leadership as the "*patterns* of action and interaction between and among various types of social units (i.e., "actors")" (Corbin & Strauss, 1994; p. 278) and recommended to explore leadership as a phenomenon resulting from team members' experiences (Kempster & Parry, 2011). Applying inductive coding to interview data we explored the fine-grained relational processes at multiple levels that underly team members' experiences of shared leadership. Analysis with two independent coders resulted in an Inter-Coder-Reliability of .88 (Cohen, 1960). To further explore and interpret how these identified processes are cognitively represented and operate "beyond surface-level data" (Kempster & Parry, 2011, p. 107) we applied qualitative network analysis to the coded data (Pokorny et al., 2018). Qualitative network analysis visualizes how the identified processes are organized in a network structure that consists of units and connections. It reveals the relative importance of the identified processes for team members' perceptions of shared leadership and provides insight into the interrelation of multiple processes within and across different levels.

In the following sections, we outline the context and sample of the study as well as our analytical strategy of combining an iterative coding procedure derived from Grounded Theory with qualitative network analysis.

3.1 Research Context and Sample

Qualitative research requires careful selection of appropriate samples and sampling context in order to explore the phenomenon of interest (Corbin & Strauss, 2015). The context of data collection is particularly important in leadership research (Liden & Antonakis, 2009; Osborn, Hunt, & Jauch, 2002) because the relational processes that form leadership within teams depend on the social interactions in context (Uhl-Bien, 2006). We designed the study such that the teams we recruited worked in a context that provides team members with a space to work collaboratively towards their team targets, especially to generate new and innovative output.

As Lord and Shondrick (2011, p. 219) suggest “where no one individual has sufficient knowledge to make decisions or perhaps even recognize emerging problems, [...] different people must assume leadership roles”. We therefore chose entrepreneurial teams to explore the relational processes that underlie team members’ perceptions of shared leadership. Due to non-standardized procedures and unknown markets, entrepreneurial teamwork is characterized by high levels of ambiguity and teams’ success depends on the ability to transform this ambiguity into the creation of new and useful practices and products (Ensley, Pearson, & Amason, 2002; Ward, 2004; Zhou, 2016). At the same time, entrepreneurial teams face high levels of complexity and the need for problem-solving which requires a diverse set of skills in the team.

Entrepreneurial team members work collaboratively on fulfilling a wide array of roles and tasks (Zhou, Vredenburg, & Rogoff, 2015). The ambiguity, complexity and the need for problem solving that characterizes entrepreneurial team work points to a fruitful sampling context for studying team members’ sharing of leadership (Denis et al., 2012; Ensley, Hmieleski, & Pearce, 2006; Pearce, 2004; Pearce & Manz, 2005).

The data collection followed a purposive sampling approach (Robinson, 2014). First, we contacted the six entrepreneurial funding programs of three large German universities who partly promoted our study to their participating teams. Second, we screened the websites of these funding programs and local entrepreneurial network platforms to contact teams via e-mail. Third, we approached teams via professional networks of the authors. In total, we invited approximately 100 teams with a positive response from 18 teams (18%), eleven of which were selected based on the following criteria: (1) team size (i.e., at least three team members who worked together on a regular basis), (2) when the team was established (i.e., teams had worked together for at least three months), and (3) generating creative output had to be part of the team's day-to-day activities. The final sample encompasses eleven teams with 42 team members (76% female, 24% male) based around a large city in Germany. Teams had an average size of 5.55 members ($SD = 1.97$), and ten out of the eleven teams had a formal manager.

3.2 Data Collection

We collected interview data from individual team members and supplemented these with a joint team exercise. The interviews and team exercises were conducted in German by the first author within a period of three months in 2018. All interviews and the presentation of the team exercise were tape recorded and transcribed, resulting in approximately 17 hours of audio-recorded data.

3.2.1 Individual interviews. Thirty-six semi-structured interviews with individual team members (30 team members, 6 managers) were conducted (21 in person, 15 via telephone). On average, interviews lasted 20 minutes (ranging from 10 to 34 minutes). A pilot-study with four student teams from an entrepreneurial program at a German university informed the development of our semi-structured interview guide with seven core questions (available from Appendix).

After an opening question the interview focused on team member's personal experiences of the emergent relational processes of shared leadership. At the end, the interviewer prompted team members to generate a metaphor that described the leadership processes within their team.

3.2.2 Team exercises. In addition to the individual interviews, the first author visited the participating teams in their working environments and conducted an adopted version of the team drawing exercise from Schyns, Kiefer, Kerschreiter, and Tymon (2011). The team exercise concerned the question of how leadership within the team evolved while working on a creative task, and how different team members shared leadership in this context. The exercise instructed participants to approach the question in three steps: A short individual self-reflection, a team discussion and drawing, and an oral presentation of the drawing to the researcher (instruction available from Appendix).

Visualization helped team members to retrieve their vivid and detailed experiences of working together and offered opportunities to express their feelings more implicitly (Meyer, Höllerer, Janscary, & van Leeuwe, 2013; Naidoo, Kohari, Lord, & DuBois, 2010; Schyns et al., 2011). The exercise lasted on average 23 minutes (ranging from 24 to 45 minutes). We included the oral presentation of the drawing in the iterative procedure to develop the coding framework.

3.3 Data Analysis

We followed a two-step analytical approach. First, we applied an iterative coding procedure derived from Grounded Theory (Charmaz, 2014; Corbin & Strauss, 2015) to uncover the relational processes that underly team members' perceptions of shared leadership. To account for the multi-level nature, we coded for processes that manifested at the individual level, the team level and in relation to the team's manager. Second, we applied a qualitative network analysis (Pokorny et al., 2018) to visualize the identified processes in a neuron-like network and

to uncover combinations and patterns of these processes that are particularly relevant for the experience of shared leadership. The detailed analytical procedure is described below.

3.3.1 Coding procedure. The first and second author conducted the inductive analysis of interviews and team exercises following an iterative procedure derived from Grounded Theory (Corbin & Strauss, 2015). Throughout the process, the researchers took an active part by deriving meaning through constant comparison of pieces out of the data against each other for similarities and differences. Lower-level concepts were grouped into high-order categories which represented what the researcher identified as major themes with regard to the research question (Corbin & Strauss, 2015). We used memos, a core analytical tool of Grounded Theory, as the written manifestation of the dialogue the researchers entered with the data (i.e. by examining, comparing, questioning, relating pieces of data; Charmaz, 2014). Memos differ from field notes as they were written separately, not while collecting the data (Corbin & Strauss, 2015; Glaser & Strauss, 2008). To increase the validity of our analysis we further applied inter-coder reliability checks as detailed below.

Development of coding framework. In a first step, the initial coding framework was developed. The first two authors independently and openly coded the transcripts of seven teams (25 interviews, 6 team exercises), followed by a joint and detailed analysis of three teams (8 interviews, 3 team exercises). This step resulted in a first joint memo with the initial lower-level concepts. An iterative process of sequential individual grouping followed by a joint discussion further resulted in a second joint memo that defined the initial higher-order categories and their corresponding lower-level concepts.

In a second step, the first two authors refined and finalized the coding framework. They independently re-analyzed the transcripts of the seven teams, followed by a joint analysis and

three additional rounds of discussion and adapting notes (each documented with memos) to arrive at the refined coding framework. Based on this, both authors independently analyzed the transcripts of the remaining four teams (11 interviews, 4 team exercises), again followed by a joint discussion. Saturation was achieved during that round of discussion as no new relevant themes were identified and the categories were fully developed and defined (Charmaz, 2014; Corbin & Strauss, 2015; Guest, Bunce, & Johnson, 2006).

Reliability-check and final coding. The authors applied check-coding approximately four weeks after the final round of coding. Interview transcripts were imported into RQDA, a qualitative analysis software application integrated in R (Huang, 2014). To derive an accurate estimate of inter-coder-reliability (ICR), coding rules were formulated in line with Miles and Hubermann (2009): Sentences or multi-sentence chunks served as a unit of analysis, and only the single best fitting code for each unit was applied. Further, to avoid over-inflation of codes, the same code was not applied to directly succeeding units of analysis. Following recommendations by Campbell, Quincy, Osserman, and Pedersen (2013) one interview of each team was randomly selected (11 interviews representing 31% of the interview data), and independently coded by the first and second author.

ICR was calculated using Cohen's Kappa (Cohen, 1960), indicating the amount of agreement that is observed over and above what would be expected by chance (MacPhail, Khoza, Abler, & Ranganathan, 2016). ICR calculation resulted in .88, indicating high levels of agreement (MacPhail et al., 2016). Following recommendations by Miles and Hubermann (2009), the authors then met for another joint review, where they went through every diverging code applied to discuss the reasons for the differences. In some cases, the application of two (overlapping) codes rather than one single code was necessary to capture the complex meaning

of a unit (Campbell et al., 2013; MacPhail et al., 2016). Based on this final discussion, the first author completed the coding procedure by coding the remaining interviews. This final coding solution served as data set for the subsequent qualitative network analysis.

3.3.2 Qualitative network analysis. Qualitative network analysis is a means to “reveal the interrelation of codes applied to a text, as well as [to] provide quantitative measures of the importance of codes relative to each other“ (Pokorny et al., 2018, p. 172). It enables to precisely describe and share complex data, thereby enhancing the clarity and transparency of results originating from qualitative analysis (Aguinis & Solarino, 2019; Pokorny et al., 2018). In our interviews, we asked for team members’ personal experiences of shared leadership in the context of creative team work. Thereby, we guided them to recall their detailed and vivid experiences on shared leadership as a context-dependent phenomenon (Shondrick et al., 2010). By applying qualitative network analysis to the coded data, we revealed the network structure of the relational processes team members recalled. Thereby, we pursued two main objectives: Firstly, to understand the relative importance of the identified relational processes for team members’ perceptions of shared leadership and, secondly, to explore how connections of relational processes within and across our theorized levels (i.e., individual-level, team-level, linked to managers’ formal leadership) explained team members’ perceptions of shared leadership.

Elements of the qualitative network. Networks have different elements: Nodes, edges and communities. We describe these elements and their general properties below, followed by interpreting their meaning in relation to our data. Descriptions are summarized in Table 1.

Nodes. In line with the theme coding network described in Pokorny et al. (2018) each node in a qualitative network refers to a code applied in the data. Their size represents the relative importance in the network, determined by the number and the strength of connections

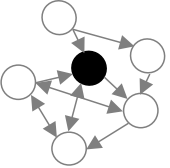
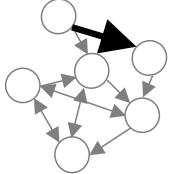
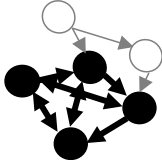
with other codes (i.e., the weighted degree) (Opsahl, Agneessens, & Skvoretz, 2010; Pokorny et al., 2018). Applied to our network of shared leadership perceptions, each node represents one relational process (i.e., lower-level concept) we identified through the inductive coding procedure. We use the term *unit* to describe nodes in the cognitive network of shared leadership. The larger a unit is depicted, the more and the stronger are its' connections with other relational processes in the network, thus, the more salient and important is the respective relational process for team members' experience of shared leadership.

Edges. Edges are arrow-headed, have different sizes and represent the connections between codes. These are determined by the chronological location of codes applied to the data, representing the flow of codes throughout the transcript. The arrow indicates the direction of that flow and the size its' relative strength (i.e., weight): The thicker, the more often two codes chronologically followed each other (Pokorny et al., 2018). The interviews guided participants to recall events that took place over time, allowing them to delve deeply into their personal experiences of leadership in the context of creative team work. We use the term *connections* to describe edges in the cognitive network of shared leadership. They indicate the sequence of relational processes over the course of the interview and therein described events, mapping how team members' recall of relational processes unfolded as the interview progressed.

Communities. Communities are groups of codes within which the connections are dense and between which the connections are sparser (Newman & Girvan, 2004). Within communities, nodes "have similar properties, serve a similar function, or in the case of codes applied to an interview, are more likely to occur close to one another in a given transcript" (Pokorny et al., 2018, p. 172). Applied to our data, a community refers to a strongly interconnected pattern of units, that is, relational processes that are likely to be described in close proximity to each other.

Table 1

Description of network elements.

Network element	General properties	Interpretation to our data
Nodes/Units 	Codes applied to the text Size: Relative importance of codes in the network, determined by the number and strength of connections (i.e., weighted degree)	Relational processes at multiple level underlying team members' experience of shared leadership (i.e., lower-level categories identified by inductive coding procedure) Size: Relative importance of relational processes in the cognitive network underlying team members' experience of shared leadership
Edges/Connections 	Connection between codes, determined by their chronological order in the text Arrow: Direction of the codes following each other Size: Relative strength (i.e., weight) of connection, based on how often two codes were applied subsequent to each other	Connection between relational processes in the cognitive network of shared leadership Arrow: Sequence of team members' recall of relational processes throughout the interviews Size: Relative strength of connections between two relational processes in the cognitive network of shared leadership
Communities 	Groups of codes within which connections are dense and between which connections are sparser; Codes that are grouped into communities occur close to one another in the text	Strongly associated patterns of relational processes that are likely to be described in close proximity to each other when team members' experience shared leadership

Network analysis procedures and metrics. We exported the coding with exact character range from RQDA and created a graph file for each interview by applying the R script provided by Pokorny et al. (2018). Graph files were further imported into the network software Gephi (Bastian, Heymann, & Jacomy, 2009) and assembled to one network across all interviews. Layout was determined following Pokorny et al. (2018) with a ForceAtlas2 algorithm (Jacomy, Venturini, Heymann, & Bastian, 2014), including LinLog mode and Prevent Overlap options.

In Gephi, we calculated metrics for the overall network (i.e., diameter, average path length, density, modularity), for each unit within the network (i.e., weighted degree, indegree, outdegree), and for connections between codes (i.e., connection weight). Overall, the *diameter* indicates the longest path between any two units in the network, low values point to a highly interconnected network. *Average path length* is the mean number of connections travelled to relate any two units in the network, low values indicate an interconnected structure with close associations between units (ranging from 0 to the diameter of the network). *Density* describes the closeness of the network to a theoretically complete network where all units are interconnected with each other. High values point to an interconnected network structure (ranging from 0 to 1). *Modularity* (Blondel, Guillaume, Lambiotte, & Lefebvre, 2008) measures the density of connections within community structures (ranging from -1 to 1; positive values indicating that connections within communities are greater than expected by chance; Newman & Girvan, 2004).

Considering the units within the network, the *weighted degree* indicates their relative importance, including both the number and strengths of their connections (Newman, 2004). Weighted degree can be further differentiated in weighted indegrees (i.e. incoming connections) and outdegrees (i.e., outgoing connections). *Connection weight* indicates the strength of a

connection between two codes, as the metric indicates the number of times a pair of codes repeatedly followed each other.

4. Results

Following our two-step analytical approach (i.e., inductive coding procedure, qualitative network analysis) we uncovered the cognitive structures that underlie team members' experiences of shared leadership.

4.1 Network of Relational Processes underlying Shared Leadership

We identified 23 relational processes at three levels (i.e., 5 processes at the individual level, 11 processes at the team level, and 7 processes linked with manager's leadership) that constitute the cognitive network of shared leadership. A detailed overview on the definition and examples of the relational processes (i.e., lower-level concepts) and their respective higher-order categories is given in Table 2. The relational processes form a cognitive network that consists of 23 units and 320 connections. These are grouped into three communities (Fig. 1 provides a visual representation of the network; Table 3 informs about overall metrics of the network). The structure of the network is highly interconnected: The diameter indicated that the longest path between any two units is 2, the average path length travelled to connect any two units is 1.37, and network's density is 0.63, indicating that it is relatively close to a theoretically complete network where all units are connected with each other. The interconnected structure informs us that the association between the relational processes in the network is strong. Perceptions of shared leadership are driven by associations between *multiple* relational processes across different levels.

Table 2

Definition and examples of the identified relational processes (i.e., lower-level concepts) and their respective higher-order categories at multiple levels.

a. Relational processes at the individual level

Lower-level concepts	Description	Example (translated)
a1. Realizing personal strengths and motivation		
Awareness of experience and expertise	Team members become aware of their own expertise or experiences in an area that is relevant to the team's creative output.	I believe leadership has many, many different elements. [...] For our team specifically, I believe the element where my strengths lie and where I often take on tasks is in fact structuring problems, planning solutions, in moving things forward. This is where I believe, if you want to call it that way, I take on leadership (team 5, team member c).
Developing interest and motivation	Team members develop interest in a specific area/topic, in the sense of a motivational focus that is relevant to the team's creative output.	It is more a leadership through passion, so, if you develop passion for certain things and you say "yes, I am thrilled about that" [...] then you have the possibility to take on leadership in these areas, yes, without possibly having the formal leadership in the company, yes, but it's more about driving topics forward based on your enthusiasm and passion (team 11, team member b).
a2. Role taking		
Claiming leadership	Team members actively claim a leading role in relation to one specific area/topic that contributes to the team's creative output.	S/he [a team member] maybe proactively approaches the team and says this and that is what s/he'd like to do next [...]. In my view, that is a situation where somebody takes on the lead, right? So, where somebody maybe, provides the initial impetus and the rest of the team then supports [the process] (team 8, team member c).

Taking responsibility	Team members feel responsible for areas/topics and actively take on responsibilities with the purpose to contribute to the team's creative output.	This aspect [who takes on leadership] totally depends on [...] each area of responsibility. For example, I'm in the sales area and for things in my area I try to, kind of, as the leader to move things towards a certain point. For communication it is my colleague, who claims this area, and tries to find solutions. So, it really depends on the current project or the idea, but by and large we all get involved [in creative processes] (team 8, team member d).
Moderating	Team members actively take on moderating roles and functions in group discussions that contribute to the team's creative output.	[A team member] is often the discussion lead in that case. Well, this helps [...] when we work creatively that one person makes sure that one doesn't completely go off topic but moves along a read thread [central theme for the discussion]. And since that person normally also selects the framework and leads the discussion, it is rather automatic that leadership emerges (team 5, team member a).

b. Relational processes at the team level

Lower-level concepts	Description	Example (translated)
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b1. Realizing similarities and complementarity

Complementary experience and expertise	The team members become aware of the complementary expertise or experience that is held within the team in an area relevant to the team's creative output.	That's what I believe to be a great strength in our small team, so to speak, that we complement each other very well, so to speak. In addition, we all have very different backgrounds, which means that we have a relatively wide range of different approaches to certain topics (team 10, manager).
Shared values and standards	The team members become aware of their similarities in terms of values, attitudes or performance standards, which enables them to generate creative output.	Well, to explain this a bit more [the team's approach to generating creative output]. We are currently three people in the team, but we were five at some point. There were a few things where it didn't really work out. There were people [in the team] who said, 'I will do this no matter what you think'. And that is what characterizes dynamic small team. You need something like similar ideas about how to make decisions, leadership, discussions, to make things work really effectively (team 5, team member b).

Joint vision	The team members become aware of their shared vision of what the team can achieve in the future, which in turn drives them to generate creative output.	I would call it [the sharing leadership in our team] a flock of birds, I think [...] well, a flock of birds flies off, one always flies in the front, but not always the same one. Somehow, nevertheless, everybody has to know where they are going, because if one suddenly turns to the left, then the other ones fly in and then probably 15 birds fall from the sky, uhm, that they are very well coordinated with each other [...] that's how I'd describe it with a metaphor (team 9, team member e).
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b2. Building relationships and safety

Positive relationships	Team members like each other and build positive relationships that help them pursue new and creative avenues.	[In our team] when one talks, the others listen. But the quality of listening makes a difference. Listening doesn't mean you close your mouth and don't say anything, but listening means being interested, because you respect a person and are interested in what they want to say. And that is the right listening. And I experience such quality here [...] that's a different kind of love, that you are connected with each other. Here are colleagues, you are, you love each other, but it's another kind of loving [...], that's voluntary. And this being attentive to each other, that's what moves me the most and also what gives my something for my life (team 7, team member a).
Relying and feeling safe	The team members feel that they can fully rely on each other in the process of pursuing new and creative output.	I believe a lot of trust comes into play, when you say, 'alright, this person will deal with this aspect entirely, and I may not get involved at all because I don't carry the responsibility in that area. But I trust this person in so far that I know I don't need to look into this [creative output in a certain area] because I know s/he will handle it well'. And I find it quite important that one has this mutual sense of trust within the team and it is strengthened again and again as responsibilities change (team 6, manager).
Being open and transparent	The team members openly share critical information with each other in the process of pursuing new and creative output.	I think in our team it's a completely open culture, too. When someone says, 'I don't want anymore, I can't do it anymore, I am not able to do it anymore, I'm no longer interested in it, it doesn't do me any good', to really address this openly. And we had some critical conversations, but we still keep trying (team 3, manager).

b3. Empowering each other

Joint decision-making	Team members empower each other by deciding jointly (e.g. consensus, compromise, majority) in areas that concern team's creative output.	Our sharing of leadership may look a little different when it comes to decision-making. For strategic decisions all of us are completely equal, there is no one in the lead. But when it comes to a decision that is mainly based on expertise and knowledge, than our contributions to the decision is of course distributed a little differently (team 5, team member b).
Granting leadership	The team members acknowledge each other's leadership roles in relation to a task or work in an area that contributes to the team's creative output.	There are situations with [team member 4a], s/he tells me 'that's better this way' and I accept that immediately. Because I know s/he just has it.. so that's rare with me that I have the feeling, I can do it all better and the others can't. But I think, and this applies to the whole team, that everyone can always judge quite well where they need the other person as a leader. And I also have certain topics where others trust me or approach me and say, 'That's what you have to tell me to do or help me'. But that doesn't make us all to bosses (team 4, team member b).

b4. Solving problems and developing ideas

Identifying and solving problems	The team members jointly identify problems and discuss opportunities to solve them with the purpose of generating new and creative output.	We want to solve a problem, that means write down the status quo and in addition often what is the problem that we want to solve. And then we collect ideas on the topic. And mostly it is not the lack of ideas, but to prioritize and say what are the good ideas and what are the bad ideas. (team 1, manager)
Discussing ideas	Team members jointly collect, share and discuss ideas with the purpose of generating new and creative output.	Everyone is thinking about what they would like to offer and then one can bring in, or someone brings in their idea - it doesn't matter if that is me or somebody else who brings in their ideas - the others very spontaneously speak, so everybody can very spontaneously say what they like 'oh yes, I love that', or what doubts they have or something like that. We allow us time for the creation of such projects, I believe. We meet once a week but also in between we are connected regarding the topic, via emails (team 7, team member c).

Gaining feedback	The team members initiate iterative feedback processes with the purpose of generating new and creative output.	And, of course, there's a need for feedback loops. So, one person has an idea for a certain design and then they ask [a team member with technical expertise in the area], 'Do you think this will be possible to implement in a certain way, yes or no?', and then we need to think again. The same thing with the budget and [another team member who manages the budget], 'So there is this idea, will this be possible to implement in terms of the budget?'. And, of course, these feedback loops also influence the process of coming up with new ideas (team 2, team member a).
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c. Processes linked to manager's leadership

Lower-level concepts	Description	Example (translated)
c1. Initiating and enabling		
Knowledge and experience	Team members utilize the manager's strategic knowledge and experience (e.g., through feedback) in relevant areas that can further the team's creative output.	Exactly because we respect that s/he [the manager] has the wider view of the business or maybe can estimate better what is realistic and what the larger consequences are for the entire business. So if s/he directs us into a certain direction or tells us her/his opinion, for example, when s/he says, 'this is a good idea, but to be honest, we won't be able to integrate this into our corporate goals for the next year', we respect that and don't continue pursuing the idea (team 9, team member c).
Stimulating and initiating	The manager stimulates team member's creative thinking and the process of idea generation by asking (critical) questions, pointing to problems and bringing in ideas.	Well, in the area of ideas, I [the manager] believe that I am the person who brings up many questions, but doesn't consciously answer these questions or dictates answers, but instead passes this all on into a dynamic process. I believe it takes somebody who structures [the process], but not via top-down influence, but it is rather like playing billiard, initiating. Right. And always looking into whether this initiating has developed into something [creative output] (team 3, manager).

Keeping an overview	The Manager keeps an overview on the processes (e.g., people, goals, information, ideas), bundles information but leaves leadership of new ideas and creative output to team members.	Well, I believe that I [the manager] am something like the head of an octopus [all laugh]. I don't think it works any other way because you only realize when you start something like a business how complex all of this is. And I am, so to speak, the person who pools all of the knowledge and also coordinates between the knowledge of the others [team members], [...] what I believe I realize is that my task is rather, to keep everyone together, I think. But then again to assign tasks, where people individually or in sub-teams get involved (team 3, team member a).
Moderating	The manager takes on moderating functions in discussions (e.g. bringing up the topic, summarizing results) with the purpose to drive team members towards new insights and ideas.	I'd say that all other team members bring in ideas, so everyone brings in ideas and [the manager] often takes on the conversation, the lead of the conversation, somewhat or is the first person to say something or summarizes something. Well, s/he often does that, taking on something like a moderator role. But when it comes to bringing in new idea, I'd say we all do that. Right (team 8, team member a).
<hr/> c2. Making decisions <hr/>		
Intervening when things go wrong	The manager actively intervenes when team processes that relate to the team's creative output go wrong.	If I'd fuck up shit somehow, yeah of course somebody from either [CEO 1] or [CEO 2] would say 'Hey, what's going on?'. That's definitely the case, so there is a hierarchy, of course, because I believe all of that wouldn't work without. But it's a very dynamic one. So, also [CEO 1] and [CEO 2] sometimes take themselves back very much and just let us do. And if they find something isn't going well, they just say so. (team 4, team member a)
Sharing decision-making	The manager hands over decision to single or multiple team members in order to foster the team's creative output.	It was also because the [manager] trusts us very much in what we do. And s/he doesn't interfere that much and doesn't always add her/his opinion. So, in that sense s/he doesn't control us, which I think is really a positive thing, because s/he provides us with a lot of freedom (team 2, team member a).
Allocating resources	The manager is perceived to allocate resources (e.g., time, money, contacts) towards single or multiple team members, which enables the team's creative output.	In the company, innovation is promoted very strongly; every employee also has five days a year, which s/he is paid for innovative topics, so to speak, and which s/he can take. Frequently, at least that's my impression the managing directors are themselves interested in it and then help to bring such things forward. We also have methods like more innovation days or culture days, where such things also find room (team 11, team member b).

Within the network, relational processes vary in their salience, that is in the number and strengths of their connections (i.e., weighted degree). The metrics for each unit in the network (i.e., weighted degree, community) are provided in Table 4. On average, the units have a weighted degree of 70 ($SD = 40$), ranging from 17 to 168. At the individual level, the average weighted degree is 86 ($SD = 38$, ranging from 34 to 139) and explains 26.5% of the overall weighted degree in the network. Team-level units have an average weighted degree of 75 ($SD = 44$, ranging from 20 to 168), explaining 51.1% of overall weighted degree in the network. Processes linked to manager's leadership have an average weighted degree of 52 ($SD = 27$, ranging from 17 to 98), accounting for 22.5% in the network's overall weighted degree. Based on the weighted degree and the explained variance it becomes apparent that compared to processes linked with manager's leadership, individual-level and even more so team-level processes are especially represented in the cognitive network of shared leadership.

The units in the network cluster into three communities (see Fig. 1 where communities are indicated by the different colors): Processes of individual-team interactions, motivating and enabling processes, and processes of team cohesion and safety. Communities represent patterns of processes that are likely to be associated with each other when team members experience shared leadership. Within these communities, units are strongly interconnected while connections across communities are sparser (Newman & Girvan, 2004).

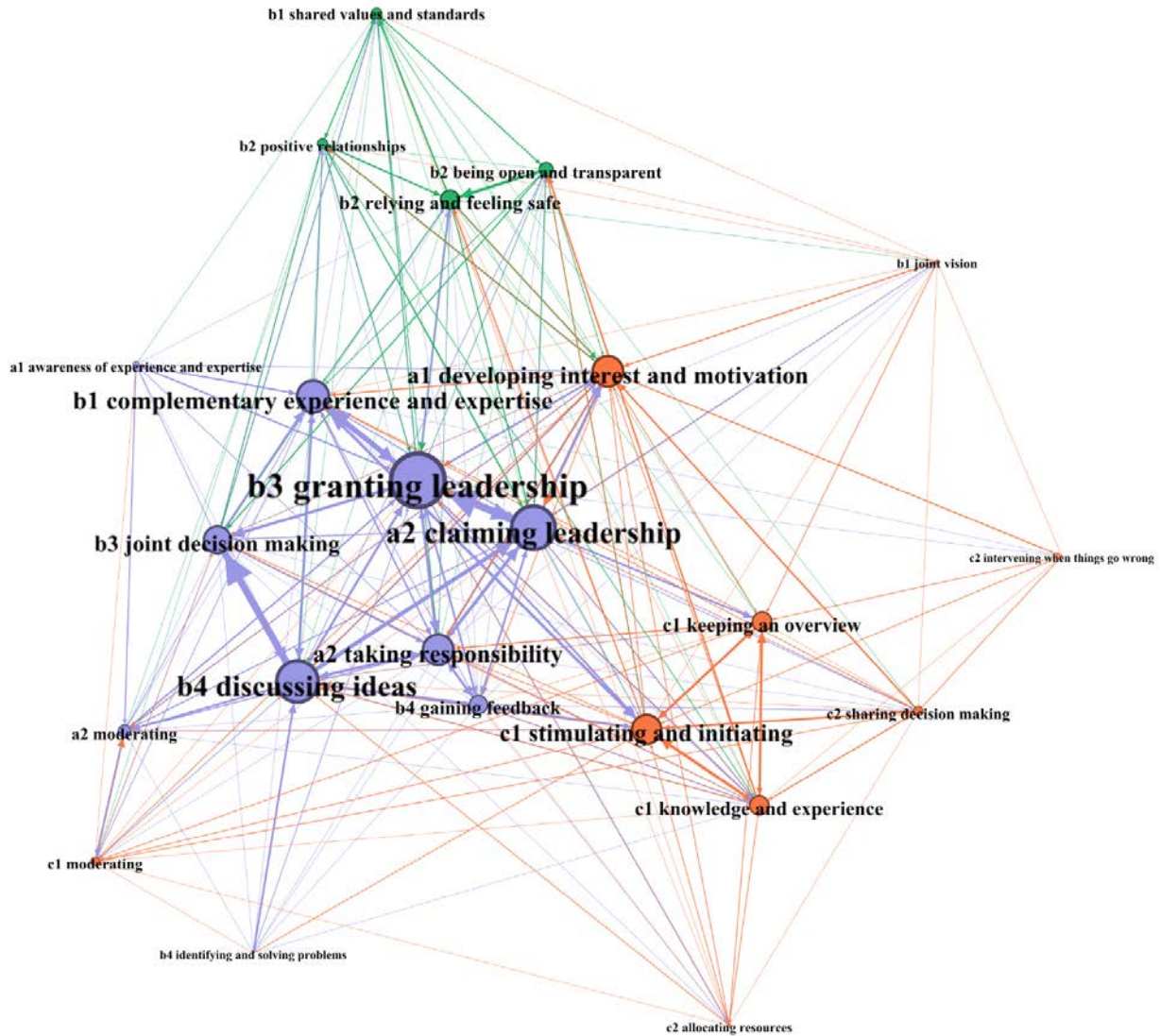


Fig. 1. Network underlying team members' perceptions of shared leadership.

Note. Network graph across all 36 interviews (23 units, 320 connections). Size of units corresponds to the weighted degree and is relative to the other units within the network. Larger arrows correspond to higher connection weight between the pair of units. Colors correspond to communities of units determined by the modularity algorithm (Blondel et al., 2008).

Characters indicate the level of analysis and the higher-order construct of the corresponding unit: a = individual level (a1=realizing personal strengths and motivation; a2=role taking), b = team level (b1=realizing similarities and complementarity; b2= building relationships and safety; b3=empowering each other; b4=solving problems and developing ideas), c = manager's leadership (c1=initiating and enabling, c2=making decisions).

Table 3

Metrics for the overall network.

Network metrics	
Nodes (N)	23
Edges (N)	320
Diameter	2
Density	0.632
Modularity	0.131
Communities (N)	3
Path length (M)	1.368

Note. Metrics are based on qualitative network analysis of 36 interviews. The diameter is the longest path between any two units; density indicates the closeness to a theoretically complete network (0;1); modularity indicates density within communities compared to expectancies by chance (-1;1); path length is the number of connections travelled to relate any two nodes (0;2 diameter]).

The communities within the network reflect our theoretically proposed levels. However, in addition they reveal patterns of processes that spans across levels: The community of individual-team interaction spans across the individual and team level and the community of motivating and enabling reveals associations across all three levels. This reinforces a dynamic and multi-level nature of shared leadership: To understand how team members perceive shared leadership we need to take association of relational processes into account that span across theorized levels. In sum, results reveal that perceptions of shared leadership are driven by a cognitive network with strong associations between multiple relational processes across different levels.

In the following, we first describe in detail the relatively most central processes in the cognitive network of shared leadership and their most relevant connections with other processes within and across levels. Following we outline the three communities of relational processes that drive team members' perceptions of shared leadership.

4.2 Central Relational Processes and their Strong Associations

Based on their weighted degree, eight relational processes across all three levels reveal to be particularly relevant in the network (see Fig. 2 for the relational processes sorted by their weighted degree). Processes at the individual level: Developing interest and motivation (a1; wd = 102), claiming leadership (a2; wd = 139), taking responsibility (a2, wd = 102). Processes at the team level: Complementary experience and expertise (b1; wd = 106), granting leadership (b3; wd = 168), joint decision making (b3; wd = 92), and discussing ideas (b4; wd = 133). And one process linked to manager's leadership: Stimulating and initiating (c1; wd = 98). These relational processes account for 58.1% of the overall weighted degree in the network.

The directed connections (i.e., incoming and outgoing connections) of these central processes uncover strong associations between units in the network. These strong associations represent the stable patterns in the cognitive network. Overall, the directed connections in the network have an average weight of 2.53 ($SD = 2.18$), ranging from 1 to 18. This speaks to many relatively weak connections (i.e., 127 connections with a weight of 1) and few relatively strong connections (i.e., 28 connections with weights of 6 or higher, summarized in Table 5). Table 5 gives an overview on the connections with strong weights (i.e., weights of 6 or higher) and an overview on the weights of all 323 connections is available as online supplementary material. In the following section we outline the eight central processes of shared leadership (i.e., developing interest and motivation (a1), claiming leadership (a2), taking responsibility (a2), complementary experience and expertise (b1), granting leadership (b3), joint decision making (b3), discussing ideas (b4), initiating and enabling (c1)) and how they are strongly connected (i.e., directed edges with weights of 6 or higher) with other relational processes within and across our theorized levels.

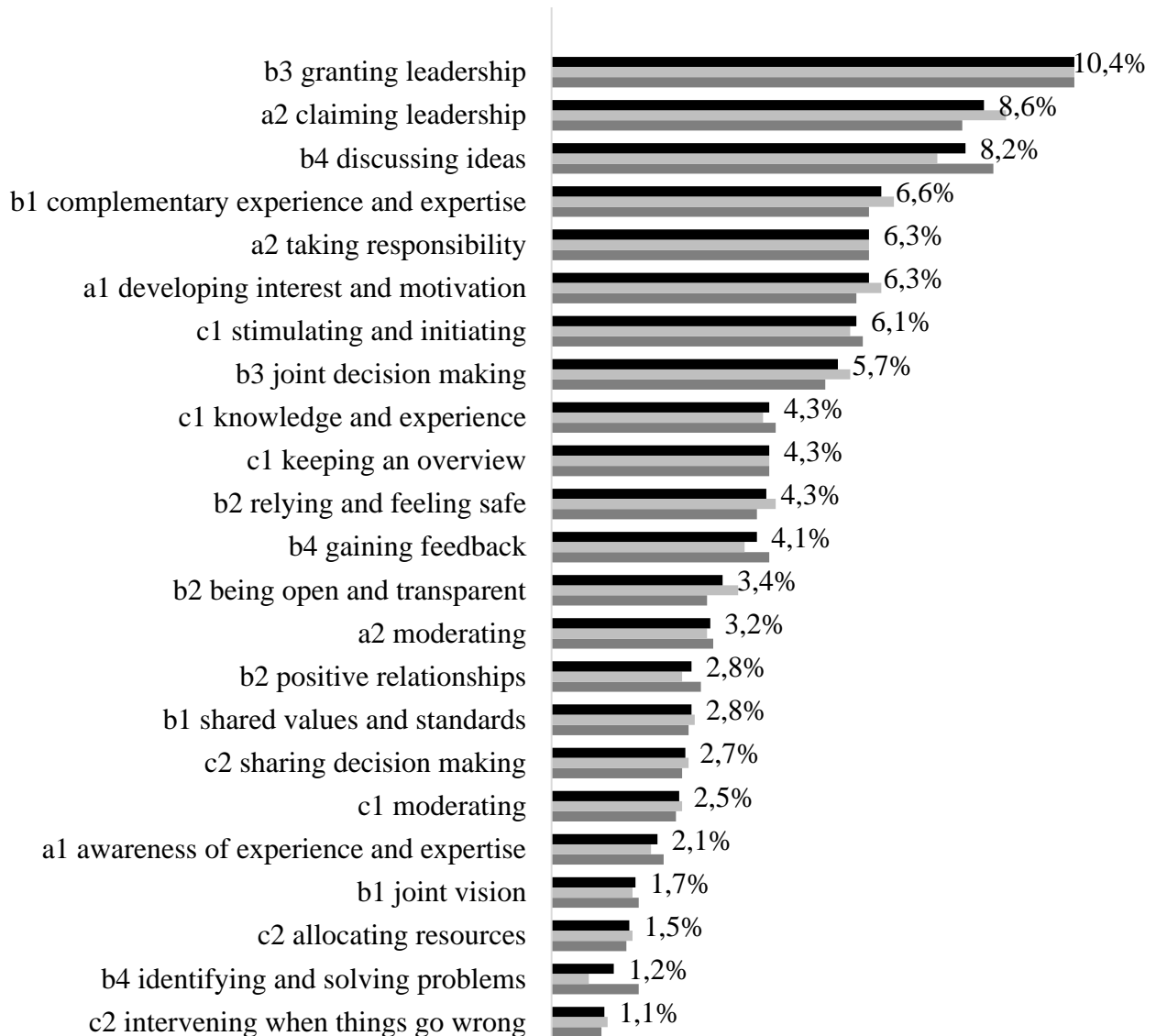


Fig. 2. Relational processes in the network, sorted by their weighted degree.

Note. The percentage is relative to the overall weighted degree across all relational processes. Black bars refer to the weighted degree in total, light bars to the weighted indegree, grey bars to the weighted outdegree. Characters indicate the higher-order category of the relational process (Individual level: a1=realizing personal strengths and motivation; a2=role taking; Team level: b1=realizing similarities and complementarity; b2= building relationships and safety; b3=empowering each other; b4=solving problems and developing ideas; Managers' leadership: c1=initiating and enabling, c2=making decisions).

Table 4

Metrics of network analysis for each relational process in the network.

Relational processes at multiple levels	Weighted degree			Amount of overall weighted degree	Community
	indegree	outdegree	total		
Individual level					
a1 awareness of experience and expertise	16	18	34	2.1%	1
a1 developing interest and motivation	53	49	102	6.3%	2
a2 claiming leadership	73	66	139	8.6%	1
a2 moderating	25	26	51	3.2%	1
a2 taking responsibility	51	51	102	6.3%	1
Team level					
b1 complementary experience and expertise	55	51	106	6.6%	1
b1 joint vision	13	14	27	1.7%	2
b1 shared values and standards	23	22	45	2.8%	3
b2 being open and transparent	30	25	55	3.4%	3
b2 positive relationships	21	24	45	2.8%	3
b2 relying and feeling safe	36	33	69	4.3%	3
b3 granting leadership	84	84	168	10.4%	1
b3 joint decision making	48	44	92	5.7%	1
b4 discussing ideas	62	71	133	8.2%	1
b4 gaining feedback	31	35	66	4.1%	1
b4 identifying and solving problems	16	14	20	1.2%	1
Manager's leadership					
c1 keeping an overview	35	35	70	4.3%	2
c1 knowledge and experience	34	36	70	4.3%	2
c1 moderating	21	20	41	2.5%	2
c1 stimulating and initiating	48	50	98	6.1%	2
c2 allocating resources	13	12	25	1.5%	2
c2 intervening when things go wrong	9	8	17	1.1%	2
c2 sharing decision making	22	21	43	2.7%	2

Note. Metrics are based on qualitative network analysis of the coded transcripts of all 36 interviews. Characters indicate the higher-order category of the relational processes (a1=realizing personal strengths and motivation; a2=role taking; b1=realizing similarities and complementarity; b2= building relationships and safety; b3=empowering each other; b4=solving problems and developing ideas; c1=initiating and enabling, c2=making decisions). Community numbers refer to three patterns of relational processes related to (1) focal individual-team interactions, (2) motivating and enabling, (3) community and safety.

Table 5

Strong directed connections in the network, sorted by their weight.

Weight	Origin	Target
18	a2 claiming leadership	b3 granting leadership
17	b4 discussing ideas	b3 joint decision-making
13	b3 granting leadership	b1 complementary experience and expertise
11	b3 granting leadership	a2 claiming leadership
10	b4 discussing ideas	a2 claiming leadership
9	b1 complementary experience and expertise	b3 granting leadership
8	a2 taking responsibility	a2 claiming leadership
8	b3 joint decision-making	b4 discussing ideas
7	a1 developing interest and motivation	a2 claiming leadership
7	b1 complementary experience and expertise	c1 stimulating and initiating
7	b2 being open and transparent	b2 relying and feeling safe
7	b3 granting leadership	a2 taking responsibility
7	b3 granting leadership	b3 joint decision-making
7	b4 discussing ideas	a2 taking responsibility
7	c1 knowledge and experience	c1 stimulating and initiating
6	a2 claiming leadership	a1 developing interest and motivation
6	a2 taking responsibility	b4 gaining feedback
6	b1 complementary experience and expertise	b4 discussing ideas
6	b3 joint decision-making	b3 granting leadership
6	b3 joint decision-making	b1 complementary experience and expertise
6	b4 discussing ideas	b3 granting leadership
6	c1 knowledge and experience	c1 keeping an overview
6	c1 stimulating and initiating	b4 discussing ideas
6	c1 stimulating and initiating	c1 keeping an overview

Note. Connections with a weight equal or higher than six are classified as strong connections in the network. Characters indicate the higher-order category of the relational process (Individual level: a1=realizing personal strengths and motivation; a2=role taking; Team level: b1=realizing similarities and complementarity; b2= building relationships and safety; b3=empowering each other; b4=solving problems and developing ideas; Managers' leadership: c1=initiating and enabling, c2=making decisions).

4.2.1 Developing interest and motivation (a1). Developing interest and motivation refers to individual team member's becoming aware of their own expertise or experiences in an area that is relevant to the team's creative output. Developing interest and motivation has strong within-level associations with team member's claiming leadership (a2; connection weight [cw] = 7 and 6).

4.2.2 Claiming leadership (a2). Claiming leadership refers to individual team member's actively claiming a leading role in relation to one specific area or topic that contributes to the team's creative output. Claiming leadership has strong associations within the individual level and even stronger across individual and team levels. Within level, claiming leadership relates to individual's realization of their motivation and interest via a bidirectional linkage (a1; cw = 7 and 6) and is often mentioned subsequent to individual team member's taking over their responsibilities (a2; cw = 8). Across levels, claiming leadership is mentioned subsequent to team members' discussing ideas (b4; cw = 10), and has a particularly strong association with team members' granting leadership roles to each other (b3; cw = 18 and 11). This cross-level connection between individual team member's claiming leadership (a2) and team members' granting leadership roles (b3) reveals to be the strongest connection in the overall network structure (aggregated cw = 29). Thereby, team members' claiming leadership precedes individual team member's granting leadership to a greater extent (cw = 18) than the other way around (cw = 11).

4.2.3 Taking responsibility (a2). Taking responsibility refers to individual team member's feeling responsible for relevant areas and actively taking on responsibilities with the purpose to contribute to the team's creative output. Taking responsibility has strong associations within the individual level and across individual and team levels. Within level, taking

responsibility is mentioned prior to claiming leadership (a2; cw = 8). Between levels, taking responsibility precedes team members' gaining feedback (b4; cw = 6) and follows after discussing ideas (b4; cw = 7) and granting leadership (b3; cw = 7).

4.2.4 Complementary experience and expertise (b1). This relational process refers to team members' awareness of the complementary expertise or experience that is held within the team in an area relevant to the team's creative output. Complementary experience and expertise has strong associations within the team level and partly across levels. Within the team-level, it relates to team members' empowering each other in terms of granting leadership (b3; cw = 13 and 9) and joint decision-making (b3; cw = 6). Further, complementary experience and expertise is followed by team members' discussing ideas (b4; cw = 6). Across levels, complementary experience and expertise is often mentioned prior to manager's stimulating and initiating (c1; cw = 7).

4.2.5 Granting leadership (b3). Granting leadership refers to team members' acknowledging each other leadership roles in relation to a task or work in an area that contributes to the team's creative output. Granting leadership has strong associations within the team level and across team and individual levels. Within level, granting leadership relates to team members' realization of complementary experience and expertise (b1; cw = 13 and 9) and joint decision making (b3; cw = 7 and 6). Further, granting leadership follows after team members' discussing of ideas (b4; cw = 6). Across levels, granting leadership strongly relates to individual team member's role taking in the form of claiming leadership (a2; cw = 18 and 11) and is followed by individual team member's taking over responsibilities (a2; cw = 7). The described within-level connection between granting leadership and complementary experience reveals to be a particularly strong connection within the network (aggregated cw = 22).

4.2.6 Joint decision making (b3). Joint decision making refers to team members' empowering each other by deciding jointly (e.g. consensus, compromise, majority) in areas that concern team's creative output. Joint decision making has strong within-level associations: It is strongly associated with discussing ideas (b4; cw = 17 and 8) and granting leadership (b3; cw = 7 and 6), and is mentioned before complementary experience and expertise (b1; cw = 6).

4.2.7 Discussing ideas (b4). Discussing ideas refers to team members' jointly collecting, sharing and discussing ideas with the purpose of generating new and creative output. Discussing ideas has strong associations across all three levels. Within level, discussing ideas relates to joint decision making (b3; cw = 17 and 8), is mentioned subsequent to team members' realization of complementary experience and expertise (b1; cw = 6), and is followed by team members' granting each other leadership roles (b3; cw = 6). Across levels, discussing ideas follows after manager's stimulating and initiating (c1; cw = 6) and precedes individual's role taking in terms of claiming leadership (a2; cw = 10) and taking over responsibilities (a2, cw = 7). The within-level connection between discussing ideas and joint decision making represents another particularly strong connection in the network (i.e., aggregated cw = 25).

4.2.8 Stimulating and initiating (c1). Stimulating and initiating refers to team manager's asking (critical) questions, pointing to problems and bringing in ideas in order to stimulate creative thinking. Stimulating and initiating has strong associations within level and across levels. Within level, manager's stimulating and initiating follows after manager's knowledge and experience (c1; cw = 7) and is followed by manager's keeping an overview (c1; cw = 6). Across levels, manager's stimulating and initiating is associated with team-level processes: It is mentioned subsequent to complementary experience and expertise (b1; cs = 7) and prior to discussing ideas (b4; cw = 6).

4.3 Communities of Processes Across Multiple Levels

The network is grouped into three communities where relational processes are closely associated (modularity = .13).

4.3.1 Individual-team interactions. The first community refers to processes that relate to individual-team interactions. That community spans across both, individual and team levels, is comparatively large (i.e., includes 10 units) and accounts for 56% of the overall amount of weighted degree in the network ($M_{wd} = 91$, $SD_{wd} = 46$, ranging from 20 to 168). At the individual level, awareness of experience and expertise (a1) and processes related to role taking (a2; claiming leadership, taking responsibility, moderating) are part of that community. At the team level, complementary experience and expertise (b1) as well as processes related to empowerment (b3; granting leadership, joint decision making), and processes related to problem solving and idea development (b4; discussing ideas, identifying and solving problems, gaining feedback) belong to this community. This community plays a central role for shared leadership as it encompasses seven out of the eight central relational processes and explains more than half of the overall amount of weighted degree in the network. This community indicates that across individual and team levels, behavioral processes (e.g., claiming and granting leadership) and processes related to awareness and realization of expertise (i.e., individual's awareness of experience and expertise, team member's complementary experience and expertise) are strongly associated when team members' experience shared leadership.

4.3.2 Motivating and enabling processes. The second community refers to processes related to motivating and enabling. This community includes nine units that span across all three levels of analysis and account for 30% of the overall amount of weighted degree in the network ($M_{wd} = 55$, $SD_{wd} = 30$, ranging from 17 to 102). It includes individual team member's developing

interest and motivation (a1), team member's joint vision (b1), and the processes linked to manager's leadership (i.e., processes that relate to manager's initiating and enabling (c1) as well as the processes linked to manager's decision making (c2)). This community reveals that team members' experience of shared leadership is based on enabling and motivating processes that are associated to a great extent with formal manager's leadership.

4.3.3 Team cohesion and safety. The third community refers to processes that relate to team cohesion and safety. This community encompasses four relational processes, however, in contrast to the previous two communities these were at the team-level only and accounted for 13% of the overall amount of weighted degree in the network ($M_{wd} = 54$, $SD_{wd} = 10$, ranging from 45 to 69). Hence, this community was considerably smaller, but also less connected across levels compared to the other two communities. Processes in this community are team members' realization of shared values and standards (b1) and the relational processes linked to building relationships and safety (b2; positive relationships, relying and feeling safe, being open and transparent). While the community is relatively small, it points to an interesting differentiation between processes we theorized at the team level: Team-level processes in the community of team cohesion and safety are fairly independent of the team-level processes that revealed to be part of the first community on individual-level processes (i.e., first community of individual-team interaction).

In sum, the communities within the network point us to three groups of strongly associated relational processes underlying team members' experience of shared leadership. Although each single process within these communities is associated with perceptions of shared leadership, it is the close association between multiple relational processes that explains team members' experience of shared leadership. To a large extent, the experience of shared leadership

are leveraged by the strong associations within the pattern of *individual-team interactions*. Further, a pattern of *motivating and enabling*, mainly reflected by processes linked to manager's leadership, contributed to shared leadership. Finally, to a lesser extent, a pattern of *team cohesion and safety* underlies team members' perceptions of leadership. A schematic model of the communities of processes that span across multiple levels is depicted in Fig. 3.

5. Discussion

The present study explored how team members experience shared leadership as a relational and multi-level phenomenon. Specifically, we explored how team members' experience of shared leadership is driven by a cognitive network structure of relational processes that manifest at the individual level, team level and in linkage with team manager's formal leadership. Our results thereby encourage the theoretical reasoning of Connectionist Models of Leadership Perceptions (Lord et al., 2001).

5.1 Theoretical Implications

Our combination of inductive Grounded Theory (Charmaz, 2014; Corbin & Strauss, 2015) and qualitative network analysis (Pokorny et al., 2018) represents an advanced methodological approach to explore the cognitive structures underlying team members' experience of shared leadership. Team members are most likely unable to directly observe their cognitive processes and may have limited insight into the cognitive representations of shared leadership built over time (Nisbett & Wilson, 1977). Grounded theory offers a means to “research ‘non-observable’ phenomena like leadership” (p.107) that result from the complex interplay of relational processes (Kempster & Parry, 2011). By inductively analyzing interviews, we identified the relational processes underlying team members' perceptions of shared leadership. To explore how these processes are cognitively represented, we subsequently applied

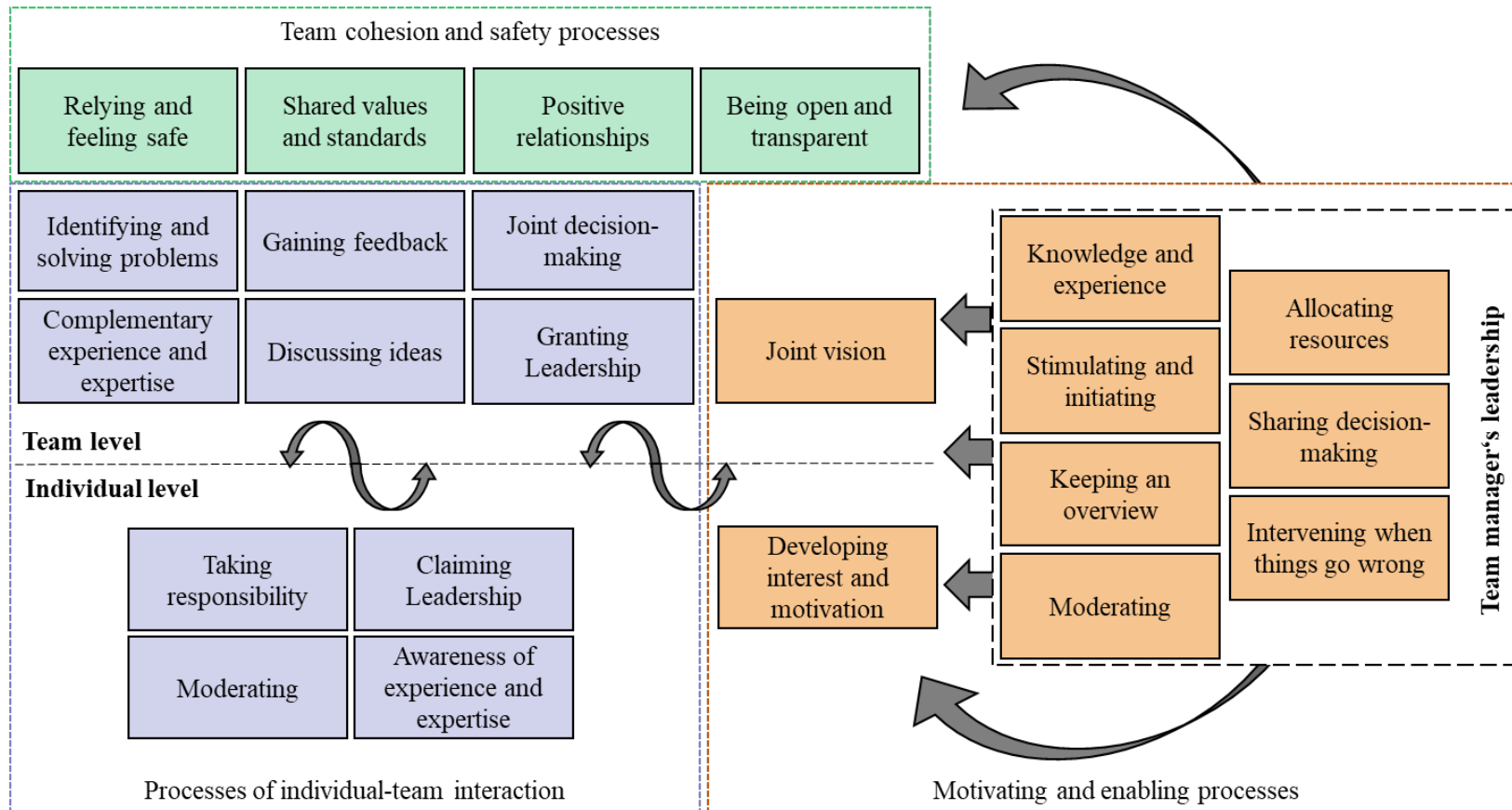


Fig. 3. Schematic model on the relational processes at multiple levels underlying shared leadership.

Note. Relational process at the individual level, team level and in relation to team manager's leadership where identified via inductive coding procedure across 36 interviews with team members. Colors indicate communities determined by subsequent network analysis (modularity algorithm; Blondel et al., 2008): Processes with the same color are closely interconnected with each other when team members experience shared leadership.

qualitative network analysis to the data. Although we are unable to depict the exact cognitive operation that takes place at a non-conscious level, the proximity of constructs in the network provides explorative insight into the cognitive network structures that drive team members' perceptions of shared leadership.

By applying an inductive coding procedure derived from Grounded Theory (Charmaz, 2014; Corbin & Strauss, 2015) in combination with qualitative network analysis (Pokorny et al., 2018) we further made several discoveries that align with Connectionist models (Lord et al., 2001). First, we identified that the cognitive structures underlying shared leadership represent a dense network of *multiple* relational processes. This emphasizes the view on shared leadership as a multi-level and relational phenomenon that emerges from the relational processes in teams that manifest formally and informally across multiple levels and that are driven by team members' cognitive and perceptual processes (Acton et al., 2019).

Second, we identified pairs of units that are strongly associated with each other when team members experience shared leadership. Results revealed strong associations within the three levels as well as across levels. The most prevalent and association of units revealed to be the connection between team members' granting each other leadership and an individual team member's claiming leadership. This strengthens the view on claiming and granting behaviors as relational cues that signal when to lead and when to follow (DeRue & Ashford, 2010). Our inductive approach led us to assume that the relational process of granting leadership operates mainly at the team level. Although granting leadership may initially originate as a relational process between two individuals, for the experience of shared leadership granting each other leadership roles in the *team* rather than between two individuals revealed to be central. We thus

extend the proposed dyadic process of DeRue and Ashford (2010) to a multi-level process that is driven by a deep-level cognitive network structure.

Third, our study demonstrated communities of units within the cognitive network of shared leadership. These clusters represent aggregated patterns of relational processes that are repeatedly associated with each other when team members remember how they engaged in shared leadership. Partly these clusters emphasized our proposed three levels. Interestingly, however, these clusters also revealed a more complex pattern that spans across our theorized levels. The processes we identified at the team level revealed to be mainly distributed across two cluster within the cognitive network of shared leadership: Individual-team interactions and team cohesion and safety processes. The cluster of team cohesion and safety processes referred to climate-related relational processes that developed over time within teams. These processes (e.g., relying and feeling safe, shared values and standards) were closely associated and less likely to be activated in relation to individual-level processes and processes linked to the team manager's leadership. The cluster of individual-team interactions revealed the importance of considering individual team members in relation to others. This corroborates with Shondrick et al. (2010) who suggest that individual team member's self in relation to others represents the critical self-regulatory structure for shared leadership. Further, this emphasizes the importance of processes that develop at dyadic levels between the multiple members of a team and that form the emergent structure of individual-team interactions in shared leadership.

Fourth, our study informs about the interplay between formal and informal leadership and about co-leadership between a manager and team members in shared leadership (Holm & Fairhurst, 2018). Thereby, the community that referred to enabling and motivating processes was of particular relevance. All relational processes we identified in relation to formal leadership

were part of this aggregated pattern of activation. Above the processes related to manager's leadership, individual team members developing interest and motivation and team members' shared vision were part of this community. This speaks to the role of formal managers in eliciting motivation for shared leadership and in enabling shared leadership. In that sense, a team manager may incorporate the role of a formal coach or facilitator that interacts with individual team members and the team to facilitate shared leadership (Carson, Tesluk, & Marrone, 2007).

Fifth, our study informs about the emergent literature on proactive followership that considers leadership as constructed through team members as active agents in their relational interactions (Uhl-Bien, Riggio, Lowe, & Carsten, 2014). By focusing on the relational processes team members recall in relation to shared leadership we capture the interactional processes that describe how team members co-produce leadership. Although our interest lied on the cognitive structures that drive perceptions of sharing *leadership*, these structures may also inform about cognitive structures associated with proactive *followership*. Cognitive structures underlying perceptions of followership operate similarly to cognitive structures of leadership in that they guide perception and behavior in social interactions (Epitropaki et al., 2013; Sy, 2010). Although leadership and followership are considered as two sides of the same coin (Uhl-Bien & Carsten, 2018), recent research by Cook, Meyer, Gockel, and Zill (2019) suggests that high followership perceptions are not equal to low leadership perceptions. For sharing leadership, team members take on leadership roles in one situation while switching to followership roles in others. Thus, there are no clear boundaries between leadership and followership and both leadership and followership identities are present and activated in team member's self-schema.

5.2 Strengths, Limitations and Future Research

One clear strength of the present study is the new methodological approach we applied. The qualitative network analysis enabled us to precisely and transparently report the results of our inductive qualitative coding procedure. Qualitative research is often criticized for its' lack in transparency as researchers "may not sufficiently represent the complexity of coded data, particularly in terms of code interrelations" (Porkorny et al., 2018, p. 169). Network analysis is a means to visualize identified codes and their relationships in a transparent manner and to further report quantitative results on the qualitative data. This provides insight for researchers into the data and the analytical process (Pokorny et al., 2018) and enables the transparency and replicability of results and conclusions drawn (Aguinis & Solarino, 2019).

Further, although scholars know on the potential biases associated with leadership measures which are based on semantic knowledge (Hansbrough et al., 2015; Shondrick & Lord, 2010), it is challenging to develop measures that tap into episodic memories (Shondrick et al., 2010). With our combination of inductive coding and subsequent qualitative network analysis we developed an approach to explore the cognitive network of shared leadership based on the relational processes team members described in relation to events. Thereby we heightened the probability for team members to retrieve knowledge from episodic memories which in turn improves the accuracy of their leadership perceptions. At the same, there is still scope for further development of the approach as we cannot determine with certainty whether our interviews *solely* activated the episodic memories team members hold on shared leadership. It might be reasonable to assume that throughout the interviews episodic *and* semantic knowledge structures were activated. To reassure that our inductive coding procedure mainly built on episodic memory structures we included data from team exercises in addition to individual interviews when we

developed the coding framework. For the team exercise we created a situation of collaborative and creative team work that corresponded the research context. Team members thereby actually experienced what we aimed to retrieve from their episodic memories: The relational processes taking place when sharing leadership. Data from team exercises were used to develop the coding framework which we applied to analyze the individual interviews.

One limitation of the present study is that although we depicted the cognitive network over the time of the interview and the events team members re-experienced throughout the interviews, we did not assess changes in their perceptions of shared leadership over time. This limits the understanding of how the cognitive network structures underlying shared leadership develop over time. For future research we thus recommend applying our methodological approach to compare the cognitive network of teams that just started working together with teams that already worked together for longer periods. Another possibility could be to depict how the cognitive network of shared leadership develops in new-formed teams over their first weeks working on a collaborative task. Adding a temporal dimension in future research could be also interesting in order to study the interplay of formal and informal relational processes over time to “see how these two forms are interdependent, interpenetrating the micro- and meso levels” (Holm & Fairhurst, 2018, p. 715).

Further, we were not able to access non-activation or inhibition between the units in the cognitive network underlying shared leadership. Network analysis revealed stable associations between units and aggregated patterns of units that form the cognitive network of shared leadership perceptions. However, processes at multiple levels that hinder shared leadership perceptions remain less clear as these were not part of our interviews. Future research could

apply similar methodologies to explore experiences of team members on events where shared leadership failed.

Considering our research sample, one minor limitation is that one of our teams in the sample (three individual interviews) did not have a formal manager. Consequently, the members of this team did not talk about relational processes associated with formal leadership. Overall, this might have consequences on the frequency of processes that were mentioned as linked to manager's leadership in our sample and could lead to an underestimation of the importance of formal manager's leadership in the cognitive network underlying team members' perceptions of shared leadership.

6. Conclusion

To conclude, this study explores the cognitive network structure underlying team members' perceptions of shared leadership as relational and multi-level phenomenon in teams. By combining inductive coding with subsequent qualitative network analysis, we reveal that team members' perceptions of shared leadership are driven by a dense cognitive network. This cognitive network represents multiple relational processes that form strongly associated patterns that span across processes at the individual level, team level and in linkage with formal manager's leadership. Perceptions of shared leadership thus depend on multiple processes that co-occur in patterns between the members of teams. Overall, our findings encourage the theoretical reasoning of Connectionist Models of Leadership Perceptions (Lord et al., 2001) and deepen our theoretical understanding of shared leadership as a social-cognitive phenomenon.

7. References

- Acton, B. P., Foti, R. J., Lord, R. G., & Gladfelter, J. A. (2019). Putting emergence back in leadership emergence: A dynamic, multilevel, process-oriented framework. *The Leadership Quarterly*, *30*(1), 145–164.
- Aguinis, H., & Solarino, A. M. (2019). Transparency and replicability in qualitative research: The case of interviews with elite informants. *Strategic Management Journal*, *48*(6), 653–663.
- Allen, P., Kaut, K., & Lord, R. G. (2008). Emotion and episodic memory. In E. Dere, A. Easton, L. Nadel, & J. P. Huston (Eds.), *Handbook of behavioral neuroscience: Episodic memory research* (pp. 115–132). New York, NY: Elsevier Science.
- Bastian, M., Heymann, S., & Jacomy, M. (2009). *Gephi: An open source software for exploring and manipulating networks*. Paper presented at the International AAAI Conference on Weblogs and Social Media, San Jose, CA.
- Blondel, V. D., Guillaume, J.-L., Lambiotte, R., & Lefebvre, E. (2008). Fast unfolding of communities in large networks. *Journal of Statistical Mechanics: Theory and Experiment*, *2008*(10), 1-12.
- Bouwen, R., & Hosking, D. M. (2000). Reflections on relational readings of organizational learning. *European Journal of Work and Organizational Psychology*, *9*(2), 267–274.
- Bryman, A. (2004). Qualitative research on leadership: A critical but appreciative review. *The Leadership Quarterly*, *15*(6), 729–769.
- Campbell, J. L., Quincy, C., Osserman, J., & Pedersen, O. K. (2013). Coding in-depth semistructured interviews. *Sociological Methods & Research*, *42*(3), 294–320.
- Carson, J. B., Tesluk, P. E., & Marrone, J. A. (2007). Shared leadership in teams: An investigation of antecedent conditions and performance. *Academy of Management Journal*, *50*(5), 1217–1234.
- Carter, D. R., DeChurch, L. A., Braun, M. T., & Contractor, N. S. (2015). Social network approaches to leadership: An integrative conceptual review. *The Journal of Applied Psychology*, *100*(3), 597–622.
- Charmaz, K. (2014). *Constructing grounded theory*. Los Angeles: SAGE Publications.
- Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurements*, *20*, 37–46.

- Cook, A., Meyer, B., Gockel, C., & Zill, A. (2019). Adapting leadership perceptions across tasks: Micro-origins of informal leadership Transitions. *Small Group Research*, 50(2), 227–265.
- Cook, A., Zill, A., & Meyer, B. (2019). Observing leadership as behavior in teams and herds – An ethological approach to shared leadership research. *The Leadership Quarterly*. Advance online publication.
- Corbin, J., & Strauss, A. (2015). *Basics of qualitative research. Techniques and procedures for developing grounded theory* (fourth edition). Los Angeles: SAGE Publications.
- Denis, J.-L., Langley, A., & Sergi, V. (2012). Leadership in the plural. *The Academy of Management Annals*, 6(1), 211–283. <https://doi.org/10.1080/19416520.2012.667612>
- DeRue, D. S., & Ashford, S. J. (2010). Who will lead and who will follow? A social process of leadership identity construction in organizations. *Academy of Management Review*, 35(4), 627–647.
- Ensley, M. D., Hmieleski, K. M., & Pearce, C. L. (2006). The importance of vertical and shared leadership within new venture top management teams: Implications for the performance of startups. *The Leadership Quarterly*, 17(3), 217–231.
- Ensley, M. D., Pearson, A. W., & Amason, A. C. (2002). Understanding the dynamics of new venture top management teams: Cohesion, conflict, and new venture performance. *Journal of Business Venturing*, 17, 362–386.
- Epitropaki, O., & Martin, R. (2005). From ideal to real: A longitudinal study of the role of implicit leadership theories on leader-member exchanges and employee outcomes. *Journal of Applied Psychology*, 90(4), 659–676.
- Epitropaki, O., Sy, T., Martin, R., Tram-Quon, S., & Topakas, A. (2013). Implicit leadership and followership theories “in the wild”: Taking stock of information-processing approaches to leadership and followership in organizational settings. *The Leadership Quarterly*, 24(6), 858–
- Foti, R. J., Hansbrough, T. K., Epitropaki, O., & Coyle, P. T. (2017). Dynamic viewpoints on implicit leadership and followership theories: Approaches, findings, and future directions. *The Leadership Quarterly*, 28(2), 261–267.
- Foti, R. J., Knee, R. E., & Backert, R. S. G. (2008). Multi-level implications of framing leadership perceptions as a dynamic process. *The Leadership Quarterly*, 19(2), 178–194.

- Friedrich, T. L., Vessey, W. B., Schuelke, M. J., Ruark, G. A., & Mumford, M. D. (2009). A framework for understanding collective leadership: The selective utilization of leader and team expertise within networks. *The Leadership Quarterly*, 20(6), 933–958.
- Grossberg, S. (1999). The link between brain learning, attention, and consciousness. *Consciousness and Cognition*, 8(1), 1–44.
- Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? *Field Methods*, 18(1), 59–82.
- Hanges, P., Lord, R. G., & Dickson, M. (2000). An information-processing perspective on leadership and culture: A case for connectionist architecture. *Applied Psychology: An International Review*, 49(1), 133–161.
- Hansbrough, T. K., Lord, R. G., & Schyns, B. (2015). Reconsidering the accuracy of follower leadership ratings. *The Leadership Quarterly*, 26(2), 220–237.
- Holm, F., & Fairhurst, G. T. (2018). Configuring shared and hierarchical leadership through authoring. *Human Relations*, 71(5), 692–721.
- Huang, R. (2014). RQDA: R-based qualitative data analysis. Retrieved from <http://rqda.r-forge.r-project.org/>
- Jacomy, M., Venturini, T., Heymann, S., & Bastian, M. (2014). Forceatlas2, a continuous graph layout algorithm for handy network visualization designed for the Gephi software. *PloS One*, 9(6), e98679.
- Kempster, S., & Parry, K. W. (2011). Grounded theory and leadership research: A critical realist perspective. *The Leadership Quarterly*, 22(1), 106–120.
- Liden, R. C., & Antonakis, J. (2009). Considering context in psychological leadership research. *Human Relations*, 62(11), 1587–1605.
- Lord, R. G., Brown, D. J., Harvey, J. L., & Hall, R. J. (2001). Contextual constraints on prototype generation and their multilevel consequences for leadership perceptions. *The Leadership Quarterly*, 12(3), 311–338.
- Lord, R. G., & Shondrick, S. J. (2011). Leadership and knowledge: Symbolic, connectionist, and embodied perspectives. *The Leadership Quarterly*, 22(1), 207–222.
- MacPhail, C., Khoza, N., Abler, L., & Ranganathan, M. (2016). Process guidelines for establishing intercoder reliability in qualitative studies. *Qualitative Research*, 16(2), 198–212.

- Meyer, R., Höllerer, M., Janscary, D., & van Leeuwe, T. (2013). The visual dimension in organizing, organization, and organization research: Core ideas, current developments, and promising avenues. *Academy of Management Annals*, 7(1), 489–555.
- Miles, M. B., & Huberman, A. M. (2009). *Qualitative data analysis: An expanded sourcebook* (Second Edition). Thousand Oaks: SAGE Publications.
- Naidoo, L. J., Kohari, N. E., Lord, R. G., & DuBois, D. A. (2010). “Seeing” is retrieving: Recovering emotional content in leadership ratings through visualization. *The Leadership Quarterly*, 21(5), 886–900.
- Newman, M. E. J. (2004). Analysis of weighted networks. *Physical Review E*, 70(5), 056131.
- Newman, M. E. J., & Girvan, M. (2004). Finding and evaluating community structure in networks. *Physical Review E*, 69(2), 026113.
- Nisbett, R. E., & Wilson, T. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological Review*, (3), 231–259.
- Opsahl, T., Agneessens, F., & Skvoretz, J. (2010). Node centrality in weighted networks: Generalizing degree and shortest paths. *Social Networks*, 32(3), 245–251.
- Osborn, R. N., Hunt, J. G., & Jauch, L. R. (2002). Toward a contextual theory of leadership. *The Leadership Quarterly*, 13(6), 797–837.
- Pearce, C. L. (2004). The future of leadership: Combining vertical and shared leadership to transform knowledge work. *Academy of Management Executive*, 18(1), 47–57.
- Pearce, C. L., & Conger, J. A. (Eds.). (2003). *Shared leadership. Reframing the hows and whys of leadership*. Thousand Oaks: SAGE Publications.
- Pearce, C. L., & Manz, C. C. (2005). The new silver bullets of leadership: The importance of self- and shared leadership in knowledge work. *Organizational Dynamics*, 34(2), 130–140.
- Pokorny, J. J., Norman, A., Zanesco, A. P., Bauer-Wu, S., Sahdra, B. K., & Saron, C. D. (2018). Network analysis for the visualization and analysis of qualitative data. *Psychological Methods*, 23(1), 169–183.
- Robinson, O. (2014). Sampling in interview-based qualitative research: A theoretical and practical guide. *Qualitative Research in Psychology*, 11(1), 25–41.
- Rush, M. C., Thomas, J. C., & Lord, R. G. (1977). Implicit leadership theory: A potential threat to the internal validity of leader behavior questionnaires. *Organizational Behavior and Human Decision Processes*, 20, 93–110.

- Schyns, B., Kiefer, T., Kerschreiter, R., & Tymon, A. (2011). Teaching implicit leadership theories to develop leaders and leadership: How and why it can make a difference. *Academy of Management Learning & Education*, 10(3), 397–408.
- Scott, C. P. R., Jiang, H., Wildman, J. L., & Griffith, R. (2018). The impact of implicit collective leadership theories on the emergence and effectiveness of leadership networks in teams. *Human Resource Management Review*, 28(4), 464–481.
- Shondrick, S. J., Dinh, J. E., & Lord, R. G. (2010). Developments in implicit leadership theory and cognitive science: Applications to improving measurement and understanding alternatives to hierarchical leadership. *The Leadership Quarterly*, 21(6), 959–978.
- Shondrick, S. J., & Lord, R. G. (2010). Implicit leadership and followership theories: Dynamic structures for leadership perceptions, memory, and leader-follower processes. In G. P. Hodgkinson & J. K. Ford (Eds.), *International Review of Industrial and Organizational Psychology* (Vol. 25, pp. 1–34).
- Strauss, A., & Corbin, J. (1994). Grounded theory methodology. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research* (Vol. 17, pp. 273–285). Thousand Oaks, CA: SAGE Publications Ltd.
- Sy, T. (2010). What do you think of followers? Examining the content, structure, and consequences of implicit followership theories. *Organizational Behavior and Human Decision Processes*, 113(2), 73–84.
- Uhl-Bien, M. (2006). Relational leadership theory: Exploring the social processes of leadership and organizing. *The Leadership Quarterly*, 17(6), 654–676.
- Uhl-Bien, M., & Carsten, M. K. (2018). Reversing the lens in leadership: Positioning followership in the leadership construct. In I. Katz, G. Eilam-Shamir, R. Kark, & Y. Berson (Eds.), *Monographs in Leadership and Management. Leadership now: Remembering the legacy of Boas Shamir* (Vol. 9, pp. 195–222). London: Emerald Group Pub. Ltd.
- Uhl-Bien, M., Riggio, R. E., Lowe, K. B., & Carsten, M. K. (2014). Followership theory: A review and research agenda. *The Leadership Quarterly*, 25(1), 83–104.
- Ward, T. B. (2004). Cognition, creativity, and entrepreneurship. *Journal of Business Venturing*, 19(2), 173–188.
- Zhou, W. (2016). When does shared leadership matter in entrepreneurial teams: The role of personality composition. *International Entrepreneurship and Management Journal*, 12(1),

Zhou, W., Vredenburg, D., & Rogoff, E. G. (2015). Informational diversity and entrepreneurial team performance: Moderating effect of shared leadership. *International Entrepreneurship and Management Journal*, *11*(1), 39–55.

8. Appendix

8.1 Interview Guide

- 1) To begin with, please describe what happens in your team when you develop and implement new ideas.
- 2) When you develop and implement new ideas in your team, are there one or multiple team members who take on leadership or lead the team?
- 3) How do you recognize that these team members are leading? How do these team members lead?
- 4) When multiple members of your team are leading, how would you describe their interaction? How do they influence each other or the team?
- 5) How does the leadership of the manager of your team interact with the leadership of other team members?
- 6) How does sharing leadership within your team impact you and the team when you develop and implement new ideas?
- 7) With which images or metaphors would you describe the shared leadership process that leads to new ideas in your team?

8.2 Team Exercise

(A) Self-reflection

Please think about the following questions and take notes of your thoughts: How does leadership in our team emerge, especially when we develop and implement new ideas? How do different members within our team interact to create the leadership process?

(B) Team discussion and team drawing

- Discuss your thoughts and notes from the first task with your team mates.
- Make one drawing that expresses how leadership within your team emerges when you work on developing and implementing new ideas.
- Note down five to ten labels that describe your drawing and the leadership process.

(C) Presentation of team drawing:

Present your team drawing to the interviewer: What are the core features of your drawing? How does leadership within your team emerge when you work on developing and implementing new ideas

8.2 Directed Connections in the Cognitive Network of Shared Leadership

Weight	Origin	Target
18	a2 claiming leadership	b3 granting leadership
17	b4 discussing ideas	b3 joint decision-making
13	b3 granting leadership	b1 complementary experience and expertise
11	b3 granting leadership	a2 claiming leadership
10	b4 discussing ideas	a2 claiming leadership
9	b1 complementary experience and expertise	b3 granting leadership
8	a2 taking responsibility	a2 claiming leadership
8	b3 joint decision-making	b4 discussing ideas
7	a1 developing interest and motivation	a2 claiming leadership
7	b1 complementary experience and expertise	c1 stimulating and initiating
7	b2 being open and transparent	b2 relying and feeling safe
7	b3 granting leadership	a2 taking responsibility
7	b3 granting leadership	b3 joint decision-making
7	b4 discussing ideas	a2 taking responsibility
7	c1 knowledge and experience	c1 stimulating and initiating
6	a2 claiming leadership	a1 developing interest and motivation
6	a2 taking responsibility	b4 gaining feedback
6	b1 complementary experience and expertise	b4 discussing ideas
6	b3 joint decision-making	b3 granting leadership
6	b3 joint decision-making	b1 complementary experience and expertise
6	b4 discussing ideas	b3 granting leadership
6	c1 knowledge and experience	c1 keeping an overview
6	c1 stimulating and initiating	b4 discussing ideas
6	c1 stimulating and initiating	c1 keeping an overview
5	a2 claiming leadership	b4 gaining feedback
5	a2 claiming leadership	c1 keeping an overview
5	a2 taking responsibility	b3 granting leadership
5	a2 taking responsibility	a1 developing interest and motivation
5	a2 taking responsibility	b4 discussing ideas
5	b2 relying and feeling safe	b3 granting leadership

5	b3 granting leadership	b4 gaining feedback
5	b3 granting leadership	a1 developing interest and motivation
5	b3 granting leadership	c1 stimulating and initiating
5	b4 discussing ideas	a2 moderating
5	b4 discussing ideas	b1 complementary experience and expertise
5	b4 gaining feedback	b4 discussing ideas
5	b4 gaining feedback	a2 taking responsibility
5	b4 identifying and solving problems	b4 discussing ideas
5	c1 keeping an overview	c1 stimulating and initiating
5	c1 moderating	a2 moderating
5	c1 stimulating and initiating	c2 sharing decision making
4	a1 awareness of experience and expertise	b1 complementary experience and expertise
4	a1 awareness of experience and expertise	a2 claiming leadership
4	a1 developing interest and motivation	b3 granting leadership
4	a1 developing interest and motivation	b2 positive relationships
4	a2 claiming leadership	a2 taking responsibility
4	a2 moderating	c1 moderating
4	a2 moderating	b3 granting leadership
4	b1 complementary experience and expertise	a2 taking responsibility
4	b2 positive relationships	b2 relying and feeling safe
4	b2 relying and feeling safe	b1 shared values and standards
4	b2 relying and feeling safe	a1 developing interest and motivation
4	b2 relying and feeling safe	b2 being open and transparent
4	b2 relying and feeling safe	b2 positive relationships
4	b3 granting leadership	c1 knowledge and experience
4	b3 granting leadership	b2 relying and feeling safe
4	b3 joint decision-making	a2 taking responsibility
4	b4 discussing ideas	a1 developing interest and motivation
4	b4 gaining feedback	b3 granting leadership
4	b4 gaining feedback	a2 claiming leadership
4	b4 gaining feedback	c1 stimulating and initiating
4	c1 keeping an overview	a2 claiming leadership
4	c1 keeping an overview	c1 knowledge and experience
4	c1 keeping an overview	b3 granting leadership

4	c1 knowledge and experience	b2 being open and transparent
4	c1 stimulating and initiating	c1 knowledge and experience
4	c2 sharing decision making	c1 stimulating and initiating
4	c2 sharing decision making	a1 developing interest and motivation
3	a1 awareness of experience and expertise	a2 moderating
3	a1 developing interest and motivation	b1 complementary experience and expertise
3	a1 developing interest and motivation	c2 intervening when things go wrong
3	a1 developing interest and motivation	a2 moderating
3	a1 developing interest and motivation	a2 taking responsibility
3	a2 claiming leadership	b4 discussing ideas
3	a2 claiming leadership	b2 being open and transparent
3	a2 claiming leadership	c1 knowledge and experience
3	a2 claiming leadership	b3 joint decision-making
3	a2 claiming leadership	b1 complementary experience and expertise
3	a2 moderating	a2 claiming leadership
3	a2 moderating	a2 taking responsibility
3	a2 taking responsibility	b1 complementary experience and expertise
3	a2 taking responsibility	c1 keeping an overview
3	a2 taking responsibility	a2 moderating
3	b1 complementary experience and expertise	b2 relying and feeling safe
3	b1 complementary experience and expertise	b2 positive relationships
3	b1 complementary experience and expertise	a2 claiming leadership
3	b1 joint vision	a1 developing interest and motivation
3	b1 shared values and standards	b2 positive relationships
3	b1 shared values and standards	b2 being open and transparent
3	b2 being open and transparent	b1 shared values and standards
3	b2 being open and transparent	b3 joint decision-making
3	b2 positive relationships	b1 shared values and standards
3	b2 positive relationships	b3 granting leadership
3	b2 positive relationships	a2 claiming leadership
3	b2 relying and feeling safe	a2 claiming leadership
3	b3 granting leadership	b1 shared values and standards
3	b3 granting leadership	b4 discussing ideas
3	b3 granting leadership	c2 allocating resources

3	b3 granting leadership	a1 awareness of experience and expertise
3	b3 joint decision-making	b1 shared values and standards
3	b3 joint decision-making	b2 positive relationships
3	b4 discussing ideas	c1 stimulating and initiating
3	b4 discussing ideas	b4 gaining feedback
3	b4 gaining feedback	c1 knowledge and experience
3	c1 keeping an overview	a2 taking responsibility
3	c1 knowledge and experience	c2 sharing decision making
3	c1 knowledge and experience	b4 discussing ideas
3	c1 stimulating and initiating	b2 relying and feeling safe
3	c1 stimulating and initiating	b3 granting leadership
3	c1 stimulating and initiating	b2 being open and transparent
2	a1 awareness of experience and expertise	b3 granting leadership
2	a1 awareness of experience and expertise	a1 developing interest and motivation
2	a1 developing interest and motivation	b2 being open and transparent
2	a1 developing interest and motivation	a1 awareness of experience and expertise
2	a1 developing interest and motivation	b2 relying and feeling safe
2	a1 developing interest and motivation	c1 keeping an overview
2	a1 developing interest and motivation	b3 joint decision-making
2	a1 developing interest and motivation	b1 joint vision
2	a1 developing interest and motivation	c1 moderating
2	a1 developing interest and motivation	b4 discussing ideas
2	a1 developing interest and motivation	b4 gaining feedback
2	a1 developing interest and motivation	c2 allocating resources
2	a2 claiming leadership	b2 relying and feeling safe
2	a2 claiming leadership	a1 awareness of experience and expertise
2	a2 claiming leadership	c1 stimulating and initiating
2	a2 claiming leadership	c2 sharing decision making
2	a2 moderating	b1 complementary experience and expertise
2	a2 moderating	a1 developing interest and motivation
2	a2 moderating	b4 discussing ideas
2	a2 taking responsibility	b2 relying and feeling safe
2	a2 taking responsibility	c1 knowledge and experience
2	a2 taking responsibility	a1 awareness of experience and expertise
2	a2 taking responsibility	b3 joint decision-making

2	b1 complementary experience and expertise	b4 gaining feedback
2	b1 complementary experience and expertise	a1 developing interest and motivation
2	b1 complementary experience and expertise	b2 being open and transparent
2	b1 complementary experience and expertise	a1 awareness of experience and expertise
2	b1 complementary experience and expertise	c1 moderating
2	b1 joint vision	c1 keeping an overview
2	b1 joint vision	a2 claiming leadership
2	b1 shared values and standards	a2 taking responsibility
2	b1 shared values and standards	b2 relying and feeling safe
2	b1 shared values and standards	b3 granting leadership
2	b2 being open and transparent	b1 complementary experience and expertise
2	b2 being open and transparent	a2 claiming leadership
2	b2 being open and transparent	b4 discussing ideas
2	b2 being open and transparent	a1 developing interest and motivation
2	b2 positive relationships	b3 joint decision-making
2	b2 positive relationships	c1 knowledge and experience
2	b2 positive relationships	a1 developing interest and motivation
2	b2 relying and feeling safe	b1 complementary experience and expertise
2	b3 granting leadership	c1 keeping an overview
2	b3 granting leadership	b2 being open and transparent
2	b3 granting leadership	c2 sharing decision making
2	b3 joint decision-making	a2 claiming leadership
2	b3 joint decision-making	a1 awareness of experience and expertise
2	b3 joint decision-making	b2 being open and transparent
2	b4 discussing ideas	c1 moderating
2	b4 discussing ideas	b1 joint vision
2	b4 discussing ideas	b2 being open and transparent
2	b4 discussing ideas	b4 identifying and solving problems
2	b4 gaining feedback	c2 sharing decision making
2	b4 gaining feedback	b1 complementary experience and expertise
2	b4 identifying and solving problems	b3 granting leadership
2	c1 keeping an overview	c2 allocating resources
2	c1 keeping an overview	a1 developing interest and motivation
2	c1 keeping an overview	b4 discussing ideas

2	c1 keeping an overview	c1 moderating
2	c1 keeping an overview	b1 complementary experience and expertise
2	c1 knowledge and experience	a2 taking responsibility
2	c1 knowledge and experience	a1 developing interest and motivation
2	c1 knowledge and experience	b3 joint decision-making
2	c1 knowledge and experience	c2 allocating resources
2	c1 moderating	b4 discussing ideas
2	c1 moderating	b3 joint decision-making
2	c1 moderating	c2 sharing decision making
2	c1 moderating	a1 developing interest and motivation
2	c1 stimulating and initiating	b4 gaining feedback
2	c1 stimulating and initiating	b1 complementary experience and expertise
2	c1 stimulating and initiating	a1 developing interest and motivation
2	c1 stimulating and initiating	c1 moderating
2	c1 stimulating and initiating	a2 taking responsibility
2	c1 stimulating and initiating	a2 moderating
2	c1 stimulating and initiating	b4 identifying and solving problems
2	c1 stimulating and initiating	b3 joint decision-making
2	c2 allocating resources	c1 stimulating and initiating
2	c2 allocating resources	b4 discussing ideas
2	c2 intervening when things go wrong	c1 keeping an overview
2	c2 intervening when things go wrong	c1 stimulating and initiating
2	c2 sharing decision making	b1 complementary experience and expertise
2	c2 sharing decision making	b3 granting leadership
2	c2 sharing decision making	c2 intervening when things go wrong
2	c2 sharing decision making	c1 knowledge and experience
1	a1 awareness of experience and expertise	b2 relying and feeling safe
1	a1 awareness of experience and expertise	b4 discussing ideas
1	a1 awareness of experience and expertise	b3 joint decision-making
1	a1 developing interest and motivation	c1 knowledge and experience
1	a1 developing interest and motivation	c1 stimulating and initiating
1	a2 claiming leadership	c1 moderating
1	a2 claiming leadership	b1 shared values and standards
1	a2 claiming leadership	b4 identifying and solving problems

1	a2 claiming leadership	b1 joint vision
1	a2 claiming leadership	c2 allocating resources
1	a2 moderating	b3 joint decision-making
1	a2 moderating	b1 shared values and standards
1	a2 moderating	b2 relying and feeling safe
1	a2 moderating	c1 knowledge and experience
1	a2 moderating	c1 stimulating and initiating
1	a2 moderating	b4 gaining feedback
1	a2 taking responsibility	c1 moderating
1	a2 taking responsibility	c1 stimulating and initiating
1	a2 taking responsibility	b1 joint vision
1	a2 taking responsibility	b2 positive relationships
1	a2 taking responsibility	c2 sharing decision making
1	b1 complementary experience and expertise	b1 joint vision
1	b1 complementary experience and expertise	c1 keeping an overview
1	b1 complementary experience and expertise	b3 joint decision-making
1	b1 complementary experience and expertise	b1 shared values and standards
1	b1 complementary experience and expertise	c2 intervening when things go wrong
1	b1 complementary experience and expertise	c1 knowledge and experience
1	b1 joint vision	b4 discussing ideas
1	b1 joint vision	b1 complementary experience and expertise
1	b1 joint vision	b2 being open and transparent
1	b1 joint vision	c2 sharing decision making
1	b1 joint vision	b1 shared values and standards
1	b1 joint vision	b2 positive relationships
1	b1 joint vision	c2 intervening when things go wrong
1	b1 shared values and standards	c2 sharing decision making
1	b1 shared values and standards	c1 keeping an overview
1	b1 shared values and standards	b1 complementary experience and expertise
1	b1 shared values and standards	a1 developing interest and motivation
1	b1 shared values and standards	a2 moderating
1	b1 shared values and standards	a1 awareness of experience and expertise
1	b1 shared values and standards	b3 joint decision-making
1	b1 shared values and standards	b4 discussing ideas

1	b1 shared values and standards	c1 knowledge and experience
1	b1 shared values and standards	a2 claiming leadership
1	b2 being open and transparent	a2 taking responsibility
1	b2 being open and transparent	b2 positive relationships
1	b2 being open and transparent	c1 stimulating and initiating
1	b2 being open and transparent	b3 granting leadership
1	b2 positive relationships	b2 being open and transparent
1	b2 positive relationships	c1 moderating
1	b2 positive relationships	b4 discussing ideas
1	b2 positive relationships	b1 complementary experience and expertise
1	b2 positive relationships	c1 stimulating and initiating
1	b2 relying and feeling safe	c1 keeping an overview
1	b2 relying and feeling safe	a1 awareness of experience and expertise
1	b2 relying and feeling safe	b1 joint vision
1	b2 relying and feeling safe	b4 gaining feedback
1	b2 relying and feeling safe	b4 discussing ideas
1	b2 relying and feeling safe	b3 joint decision-making
1	b2 relying and feeling safe	a2 taking responsibility
1	b3 granting leadership	c1 moderating
1	b3 granting leadership	a2 moderating
1	b3 granting leadership	b1 joint vision
1	b3 granting leadership	b2 positive relationships
1	b3 granting leadership	c2 intervening when things go wrong
1	b3 joint decision-making	a2 moderating
1	b3 joint decision-making	c2 allocating resources
1	b3 joint decision-making	b4 gaining feedback
1	b3 joint decision-making	c1 stimulating and initiating
1	b3 joint decision-making	c2 sharing decision making
1	b3 joint decision-making	a1 developing interest and motivation
1	b3 joint decision-making	c1 knowledge and experience
1	b3 joint decision-making	c1 moderating
1	b4 discussing ideas	c1 keeping an overview
1	b4 discussing ideas	b2 relying and feeling safe
1	b4 discussing ideas	c1 knowledge and experience
1	b4 gaining feedback	b1 joint vision

1	b4 gaining feedback	b2 relying and feeling safe
1	b4 gaining feedback	b1 shared values and standards
1	b4 gaining feedback	a1 developing interest and motivation
1	b4 gaining feedback	b2 being open and transparent
1	b4 gaining feedback	c2 allocating resources
1	b4 identifying and solving problems	a2 moderating
1	b4 identifying and solving problems	b4 gaining feedback
1	b4 identifying and solving problems	b3 joint decision-making
1	b4 identifying and solving problems	b1 complementary experience and expertise
1	b4 identifying and solving problems	a2 taking responsibility
1	b4 identifying and solving problems	c1 knowledge and experience
1	b4 identifying and solving problems	a2 claiming leadership
1	c1 keeping an overview	b2 relying and feeling safe
1	c1 keeping an overview	b1 shared values and standards
1	c1 keeping an overview	b4 gaining feedback
1	c1 keeping an overview	b1 joint vision
1	c1 keeping an overview	c2 intervening when things go wrong
1	c1 knowledge and experience	b4 gaining feedback
1	c1 knowledge and experience	b2 relying and feeling safe
1	c1 knowledge and experience	b3 granting leadership
1	c1 knowledge and experience	c1 moderating
1	c1 knowledge and experience	a2 claiming leadership
1	c1 moderating	c1 stimulating and initiating
1	c1 moderating	a2 claiming leadership
1	c1 moderating	b3 granting leadership
1	c1 moderating	a1 awareness of experience and expertise
1	c1 moderating	c1 knowledge and experience
1	c1 moderating	b4 identifying and solving problems
1	c1 moderating	c1 keeping an overview
1	c1 stimulating and initiating	b1 shared values and standards
1	c1 stimulating and initiating	c2 allocating resources
1	c1 stimulating and initiating	b1 joint vision
1	c1 stimulating and initiating	a2 claiming leadership
1	c2 allocating resources	a2 taking responsibility
1	c2 allocating resources	c2 sharing decision making

1	c2 allocating resources	c1 keeping an overview
1	c2 allocating resources	b3 granting leadership
1	c2 allocating resources	c1 knowledge and experience
1	c2 allocating resources	c1 moderating
1	c2 allocating resources	b2 relying and feeling safe
1	c2 allocating resources	a2 claiming leadership
1	c2 intervening when things go wrong	b3 granting leadership
1	c2 intervening when things go wrong	a1 developing interest and motivation
1	c2 intervening when things go wrong	c2 sharing decision making
1	c2 intervening when things go wrong	c1 knowledge and experience
1	c2 sharing decision making	c1 keeping an overview
1	c2 sharing decision making	b4 discussing ideas
1	c2 sharing decision making	a2 taking responsibility
1	c2 sharing decision making	b1 joint vision
1	c2 sharing decision making	a2 claiming leadership

Note. Summary of all 320 directed connections in the network, sorted by their weighted degree. Letter and number indicate the higher-order category of the relational process (Individual level: a1=realizing personal strengths and motivation; a2=role taking; Team level: b1=realizing similarities and complementarity; b2= building relationships and safety; b3=empowering each other; b4=solving problems and developing ideas; Managers' leadership: c1=initiating and enabling, c2=making decisions).