The two sociograms show two managers, their bosses, and colleagues with whom both discuss work. Luisa operates under “embedded supervision” in that she and her boss discuss work with many of the same people. Maria operates under “bridge supervision” in that she and her boss have separate colleagues so supervision is exercised over a network bridge between their separate social worlds.

In an analysis of the management population in which Luisa and Maria work, whose network is associated with higher performance?

A. Managers like Luisa perform higher.

B. Managers like Maria perform higher.

C. Managers like Maria and Luisa perform about the same.

Sociograms are from Figures 1 and 2 in Burt and Wang, “Bridge supervision: Correlates of a boss on the far side of a structural hole” (2022 Academy of Management Journal).
Research Question: Correlates of Bridge versus Embedded Supervision

Foundation: Performance Advantage of Network Brokers (The theme in this paper is that behavior/emotion are a function of person in social context. Solomon Asch [1952:61]: “Most social acts have to be understood in their setting, and lose meaning if isolated. No error in thinking about social facts is more serious than the failure to see their place and function.” Personal network is manager’s immediate social context.)

From Ego Network to Dyad Network & Bott Hypothesis

(H1-2) Behavioral/Emotional Correlates of Bridge Supervision

(H3) Performance Implications of Bridge Supervision

Conclusion & Ideas for Future Research

Bridge Supervision affects manager style (H1-2) but not performance (H3)
Replication for reliability & generalization
Time (networks and supervision, initial versus established)
Agency (origins have implications for evidence; boss, manager, workplace)
Scale (Schelling macro consequences of micro behavior)
Sociogram of Formal Network in a Large EU Healthcare Company

- **CEO**
- **C-Suite**
- **Heir Apparent**
- **Other, Respondent**
- **Other, NonRespondent**
Social Network at the Top of the Company

Lines indicate frequent and substantive work discussion; heavy lines especially close relationships.

Figure 2 in Burt, "Network disadvantaged entrepreneurs" (Entrepreneurship Theory & Practice, 2019)
Network models of advantage are grounded in two facts about the social distribution of information from the 1950s “golden age” of social psychology (e.g., Festinger, Schachter & Back, 1950; Asch, 1951; Schachter, 1951; Katz & Lazarsfeld, 1955): (1) people cluster into groups as a result of contact opportunities defined by the places where people meet, and (2) communication is more frequent and influential within than between groups so that people in the same group develop similar views.

People tire of repeating arguments and stories explaining why they believe and behave the way they do. Within a group, people create systems of phrasing, opinions, symbols and behaviors defining what it means to be a member. Beneath the familiar arguments and experiences are new, emerging arguments and experiences awaiting a label, the emerging items more understood than said within the group. What was once explicit knowledge interpretable by anyone becomes tacit knowledge meaningful primarily to insiders. With continued time together, information in the group becomes “sticky” — nuanced, interconnected meanings difficult to understand in other groups (Von Hippel, 1994). Much of what we know is not easily understood beyond the colleagues around us. Holes tear open in the flow of information between groups. These holes in the social structure of communication, or more simply structural holes (Burt, 1992), are missing relations indicating where information is likely to differ on each side of the hole and not flow easily across the hole. In short, the bridge and cluster structure in social networks indicates where information is relatively homogeneous (within cluster) and where information is likely to be heterogeneous (between clusters).

From Burt, "Network disadvantaged entrepreneurs" (Entrepreneurial Theory and Practice, 2019, page 22)
MEASUREMENT: Idea is clear. Good prediction? Contrast people rich in access to structural holes versus other

(cosmopolitans vs locals in Merton 1949; opinion leaders vs followers in Katz & Lazarsfeld 1955; extensive vs intensive search in Rees 1966; leaders vs managers in Kotter 1990; exploration vs exploitation in March 1991; cultural omnivores vs univores in Peterson 1992; open vs closed networks, on the edge of worlds vs at the center; and of course, Schumpeter's 1911 touchstone image of entrepreneurial "leaders" bringing together elements from separate production spheres within which people live by routines)

Disconnected contacts provide rich access to structural holes

100% in one group provides no access to structural holes

Network Constraint

many ——— Structural Holes ——— few

Here network constraint – the extent to which a person’s network is limited to a single group, which means they have no access to structural holes (other popular measures are size, density, and ego-network betweenness). Constraint increases as a network becomes small (few alternative contacts), dense (strong relations between contacts), or hierarchical (central contact holds others together)

Data are easily available from surveys, 360°, email, and other electronic trace (badges, chat rooms, social media, virtual worlds, etc.).

See Appendix I on network survey data, and Appendix II on measuring access to structural holes.
Business Success Decreases as the Network Around a Person Closes

Define Z-Score Relative Success

Manager Background (e.g., job rank, age, geography, kind of work, organization division, education, etc.)

- Managers in the U.S. (n = 2085, 7 study pops, r = -.75)
- Managers in Europe (n = 1094, 3 study pops, r = -.73)
- Managers in Asia Pacific (n = 507, 2 study pops, r = -.77)
- Entrepreneurs in China (n = 1084, 2 study pops, r = -.71)
- EverQuest II Avatars (16109 people, 29555 characters, 2 samples, r = -.79)

NOTE — Plotted data are average scores within five-point intervals of network constraint within each study population (2018 survey added to Burt, Social Networks 2019: Figure 1; see footnote 2 there for data sources; cf. Figure 1.8 in Brokerage and Closure). Correlations are computed from the plotted data using log network constraint. Inset graph to the upper left contains hypothetical data illustrating computation of z-score relative performance.
From Ego Network to Dyad Network

The focus on manager ego networks has been productive, “but it ignores a network condition that occurs with some frequency: There are social environments in which one colleague stands out from the others, not in the familiar network sense of being more central, or in some other way distinguished by the network structure around ego.

Rather, the one colleague stands out because ego's role is so much defined exogenously in terms of the colleague that ego’s behavior in his or her role is in some large part dependent on the network around the colleague as well as the network around ego. To make accurate network predictions about ego, data on the network around ego, traditionally termed an ‘ego network’ (Perry, Pescosolido & Borgatti, 2018; Small et al., 2021), needs to be expanded to describe the ‘dyad network’ composed of ego, the colleague, key contacts they share, and key contacts they have separately. How ego and colleague plug into one another’s networks is a factor in ego’s behavior. ... We make no pretense that attention to dyad networks is an innovation. ... But dyad networks have not been an element in research on the competitive advantage provided by a manager’s network. We draw on previous work to integrate dyad networks into that ongoing research.”

Child & Parent (Coleman, 1988, 1990)

Husband & Wife (Bott, 1955, 1957)

Buyer & Seller (Commons, 1924; Coase, 1937 ... Granovetter, 1985; Grief, 1989; Bernstein, 1992)

Manager & Boss (Burt & Wang, 2022: quoted above)
Research Question: Correlates of Bridge versus Embedded Supervision

Foundation: Performance Advantage of Network Brokers (The theme in this paper is that behavior/emotion are a function of person in social context. Solomon Asch [1952:61]: “Most social acts have to be understood in their setting, and lose meaning if isolated. No error in thinking about social facts is more serious than the failure to see their place and function.” Personal network is manager’s immediate social context.)

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Conclusion & Ideas for Future Research

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Replication for reliability & generalization
Time (networks and supervision, initial versus established)
Agency (origins have implications for evidence; boss, manager, workplace)
Scale (Schelling macro consequences of micro behavior)
Segregated Conjugal Role & Network (Newbolts, Bott, 1957:70-73)

(Decisions) Husband controls the finances, with the wife given an allowance to maintain the household, and wife controls the household.

(Privacy) Conjugal role activities between husband and wife are treated as the legitimate interest of one's friends.

(Homophily) Husband and wife take it for granted that men have interests different from women.

(Compatibility) Husband and wife deemphasize importance of physical sexuality to a happy marriage.

Joint Conjugual Role & Network (five couples; Bott, 1957: 79-84)

(Decisions) Husband and wife jointly determine the family's major financial decisions and both maintain the household.

(Privacy) The conjugal relation is deemed private, outside the legitimate interests of one's friends.

(Homophily) Husband and wife discuss as an open question the extent to which men and women have different interests.

(Compatibility) Physical sexuality is emphasized as an important component in a happy marriage.
**Bott Hypothesis Applied to Manager and Boss: Predictors**  
*(Burt & Wang, 2022: text)*

We use the term “bridge supervision” to refer to a condition in which the relationship between manager and boss is a network bridge between two social worlds. The fewer mutual contacts Shared by manager and boss, the more separate their social worlds, and so the more bridge-like the supervisory relationship. The more dense the connections among a manager’s exclusive contacts, the more those contacts are a constituency for the manager separate from the boss — and so the more bridge-like the supervisory relationship.

**Measures:**

Manager-Boss Mutual Contacts – count of mutuals or sum of indirect connections through mutual contacts

Density among Manager-Exclusive Contacts (edensity) – average strength of connection (lack of structural holes) between contacts connected to manager but not to boss

Binary Bridge Supervision – effective mixture of absent mutual contacts and substantial exclusive density (mixture TBD)
Bott Hypothesis Applied to Manager and Boss: Behavioral/Emotional Correlates of Bridge Supervision (Burt & Wang, 2022: Table 1)

### Dimensions to Supervision Role Segregation

<table>
<thead>
<tr>
<th></th>
<th>Managers Operating under Embedded Supervision</th>
<th>Managers Operating under Bridge Supervision</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Decisions</strong></td>
<td>OVERLAPPING: Manager and boss discuss decisions</td>
<td>SEPARATE: Discussion is unnecessary; manager has authority in a domain separate from boss</td>
</tr>
<tr>
<td><strong>Privacy</strong></td>
<td>HIGH: Discussion with boss is private between manager and boss</td>
<td>LOW: Discussion with boss is legitimate interest of colleagues</td>
</tr>
<tr>
<td><strong>Homophily</strong></td>
<td>HIGH: Manager and boss are in many ways the same kind of person, with potentially different goals and interests</td>
<td>LOW: Manager takes for granted that manager and boss are different kinds of people with different goals and interests</td>
</tr>
<tr>
<td><strong>Compatibility</strong></td>
<td>VALUED: Personal compatibility is important to successful manager-boss operation</td>
<td>IRRELEVANT: Personal compatibility is not important to successful manager-boss operation</td>
</tr>
</tbody>
</table>

Hypotheses: Probability of role segregation (1) decreases with more mutual contacts and (2) increases with higher manager-exclusive density. (3) Bridge supervision adds nothing to usual performance prediction by manager’s access to structural holes.

First two are from analogy with Bott. Third is from past research showing lack of spillover from neighbor networks when manager’s own network is held constant.
Research Question: Correlates of Bridge versus Embedded Supervision

Foundation: Performance Advantage of Network Brokers (The theme in this paper is that behavior/emotion are a function of person in social context. Solomon Asch [1952:61]: “Most social acts have to be understood in their setting, and lose meaning if isolated. No error in thinking about social facts is more serious than the failure to see their place and function.” Personal network is manager’s immediate social context.)

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(H3) Performance Implications of Bridge Supervision

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  Replication for reliability & generalization
  Time (networks and supervision, initial versus established)
  Agency (origins have implications for evidence; boss, manager, workplace)
  Scale (Schelling macro consequences of micro behavior)
Study Population

Supply chain managers across large American defense electronics company at turn of the century (> 100,000 employees, 673 managers in supply chain, 455 representative survey respondents; data used previously in Burt, 2004 AJS, “Structural Holes and Good Ideas,” and Burt, 2007 AMJ, “Secondhand Brokerage”). The company is bureaucratic high tech: Reliability is a priority as much as innovation, with a traditional respect for corporate hierarchy.

Compensation (-1.86 ≤ z-score salary ≤ 4.08), name of current boss, and background variables come from company HR files.

Idea text data are taken from an online survey (“From your perspective, what is the one thing that you would change to improve [the company's] supply chain management?” Ideas are evaluated on 5-point scale by the two EVPs: “How much value could be generated if the idea were well executed?” Some ideas are dismissed. An EVP explained: ““for ideas that were either too local in nature, incomprehensible, vague, or too whiny, I didn’t rate them.” Dismissed ideas are given a rating of zero. (-1.43 ≤ z-score ≤ 2.05).

Network data are from the online survey: Name the person with whom you discussed your idea {if discussed}, and “More generally, who are the people with whom you most often discuss supply-chain issues?” Up to 8 names are recorded, followed by request for connections between cited colleagues (meet often, sometimes, rarely).
Bridge Supervision of Manager in a Closed Network (Burt & Wang, Figure 1B)

Bold line is supervision tie between focal manager and boss. Other solid lines indicate work discussion. Dashed lines indicate weaker connection, as explained in text.

6 manager-exclusive, 9 boss-exclusive, 0 mutual contacts, and 60.0 edensity 39.18 network constraint (0.01 z-score), -.36 z-score salary, -1.04 z-score idea value
Bridge Supervision of a Network Broker  
(Burt & Wang, Figure 1A)

Bold line is supervision tie between focal manager and boss. Other solid lines indicate frequent and substantive work contact. Dashed lines indicate weaker connection, as explained in text.

- **Focal Manager**
- **Manager’s Boss**
- **Manager’s Contacts**
- **Boss’ Contacts**
- **Joint Contacts**

9 manager-exclusive, 29 boss-exclusive, 0 mutual contacts, 8.33 edensity, 17.12 network constraint (-1.23 z-score), -1.73 z-score salary, 0.50 z-score idea value
Embedded Supervision of Manager in a Closed Network
(Burt & Wang, Figure 2)

Bold line is supervision tie between focal manager and boss. Other solid lines indicate frequent and substantive work contact. Dashed lines indicate weaker connection, as explained in text.

- 1 manager-exclusive
- 13 boss-exclusive
- 4 mutual contacts
- 0.0 edensity
- 1.14 z-score salary
- -1.43 z-score idea value

1 manager-exclusive, 13 boss-exclusive, 4 mutual contacts, and 0.0 edensity
42.15 network constraint (0.13 z-score), 1.14 z-score salary, -1.43 z-score idea value
Measures of Supervision Role Segregation

Boss is excluded from colleagues with whom manager discusses work (0, 1)

The boss was not mentioned by title in the survey. Managers were asked to talk about their behavior, naming colleagues with whom they most often discussed work. The manager does not have to cite the boss. A third of them did not (33%). Not citing the boss reflects three dimensions in Table 1: “Decisions” if the manager views the boss as working in a separate decision domain so they need not discuss their work, “Homophily” if the manager views the boss as a kind of person different from the manager so discussion is fraught with misunderstandings, or “Compatibility” if the manager does not personally enjoy discussion with boss. ... More generally, failure to cite says the boss did not occur to a manager when naming up to eight people with whom the manager often discusses work.

Manager keeps emotion to him or herself when expressing to management best idea for creating value (0, 1)

No emotion in idea text is determined by LIWC. Displaying emotion indicates two dimensions in Table 1: the understanding presumed when talking to a person socially similar to yourself (Homophily), and the comfort of talking to someone who understands you and cares about how you feel (Compatibility). If bridge supervision fosters social and emotional distance between manager and boss as hypothesized, then presenting an idea to superiors should be less comfortable for a manager operating under bridge supervision. The lack of informal discussion with the boss means that upward communication can feel like one has just walked “on stage.”
## Results on First Two Hypotheses (Burt & Wang, Table 2)

<table>
<thead>
<tr>
<th></th>
<th>Excludes Boss</th>
<th></th>
<th>Hides Emotion</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1</td>
<td>Model 2</td>
<td>Model 3</td>
<td>Model 4</td>
</tr>
<tr>
<td>Summary chi-square test for association with</td>
<td>16.27</td>
<td>14.12</td>
<td>13.27</td>
<td>14.32</td>
</tr>
<tr>
<td>controls for manager differences significant in Burt (2004) for predicting compensation and idea value (11 d.f., job rank, purchasing, age, minority, education, high and low-tech division, either of two expensive urban offices)</td>
<td>P ~ .13</td>
<td>P ~ .23</td>
<td>P ~ .28</td>
<td>P ~ .22</td>
</tr>
<tr>
<td>Network Constraint</td>
<td>-.22 (.42) ***</td>
<td>-.26 (.38)</td>
<td>.60 (.36)</td>
<td>.54 (.41)</td>
</tr>
<tr>
<td>Mutual Contacts</td>
<td>-.60 (.08) ***</td>
<td>—</td>
<td>-.12 (.06)</td>
<td>—</td>
</tr>
<tr>
<td>Exclusive Density</td>
<td>.019 (.005) ***</td>
<td>—</td>
<td>-.04 (.42)</td>
<td>—</td>
</tr>
<tr>
<td>Bridge Supervision (BS)</td>
<td>—</td>
<td>2.25 (.24) ***</td>
<td>—</td>
<td>.68 (.25) **</td>
</tr>
<tr>
<td>BS * Network Constraint</td>
<td>—</td>
<td>-.60 (.53)</td>
<td>—</td>
<td>1.30 (.61) *</td>
</tr>
<tr>
<td>Intercept</td>
<td>6.34</td>
<td>-2.12</td>
<td>-3.56</td>
<td>-3.94</td>
</tr>
<tr>
<td>Pseudo R²</td>
<td>.27</td>
<td>.21</td>
<td>.06</td>
<td>.08</td>
</tr>
</tbody>
</table>

Note — These are logit regressions estimated across 455 managers predicting who does not cite the boss as a discussion partner (Models 1, 2) and the lack of emotion in a manager’s idea text (Models 3, 4). Robust standard errors are in parentheses (Stata “robust”). Network constraint is entered as log constraint, and measured as a deviation from its mean in defining interaction terms. “Mutual Contacts” is the number of contacts mutual to manager and boss. “Exclusive Density” is the density of connections among manager contacts not connected directly with boss. “Bridge Supervision” is a binary variable defined by the shaded area in Figure 3 (on next page). * P < .05  ** P < .01  *** P < .001
Bridge-Supervised Managers More Often Exclude the Boss from Their Core Discussion Partners (Burt & Wang, Figure 3)
Bridge-Supervised Managers Are Less Likely to Show Emotion When Pitching Their Idea for Improving the Organization (Burt & Wang, Figure 4)

(Regression lines are estimated through the plotted data, which are averages within 5-point intervals of network constraint, with scores higher than 60 points combined in one category because of few observations.)
Research Question: Correlates of Bridge versus Embedded Supervision

Foundation: Performance Advantage of Network Brokers (The theme in this paper is that behavior/emotion are a function of person in social context. Solomon Asch [1952:61]: “Most social acts have to be understood in their setting, and lose meaning if isolated. No error in thinking about social facts is more serious than the failure to see their place and function.” Personal network is manager’s immediate social context.)

From Ego Network to Dyad Network & Bott Hypothesis

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Time (networks and supervision, initial versus established)
Agency (origins have implications for evidence; boss, manager, workplace)
Scale (Schelling macro consequences of micro behavior)
Broaden the context to look for spillover from neighbors. Neighbor networks can reinforce structural holes as well as provide further access.

Between John or Jim, who is more likely to turn in higher performance?

Why?

<table>
<thead>
<tr>
<th>C versus</th>
<th>IC = \sum_j C_j/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>(25)</td>
<td>Constraint (C)</td>
</tr>
<tr>
<td>[25]</td>
<td>Indirect</td>
</tr>
<tr>
<td>(25)</td>
<td>Constraint (IC)</td>
</tr>
<tr>
<td>[58]</td>
<td></td>
</tr>
</tbody>
</table>

See Appendix III on measuring network spillover from neighbors.
The ostensible advantage is spurious, here illustrated predicting banker compensation from direct constraint (banker's own network) vs indirect (from neighbor networks).

<table>
<thead>
<tr>
<th></th>
<th>Total Annual Compensation</th>
<th>Bonus Only</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>Intercept</td>
<td>-1.63</td>
<td>-1.92</td>
</tr>
<tr>
<td>Direct Network Constraint</td>
<td>-.38 (.09) **</td>
<td>—</td>
</tr>
<tr>
<td>Indirect Network Constraint</td>
<td>—</td>
<td>-.39 (.11) **</td>
</tr>
<tr>
<td>Senior Job Rank</td>
<td>.73 (.08) **</td>
<td>.79 (.09) **</td>
</tr>
<tr>
<td>Peer Evaluation</td>
<td>.51 (.09) **</td>
<td>.58 (.10) **</td>
</tr>
<tr>
<td>Years with Firm</td>
<td>.02 (.01)</td>
<td>.03 (.01) *</td>
</tr>
<tr>
<td>Minority</td>
<td>-.05 (.19)</td>
<td>-.14 (.19)</td>
</tr>
<tr>
<td>US Headquarters</td>
<td>.28 (.11) *</td>
<td>.23 (.11) *</td>
</tr>
</tbody>
</table>

NOTE — Regression coefficients are presented for annual data pooled across three years (469 observations). Compensation next year is predicted from row variables this year. Network constraint is the log of constraint. Annual compensation includes salary and bonus. Compensation is measured as a z-score within each year to indicate relative annual compensation. Squared multiple correlations for the equations are .31, .28, .31, and .31 (zero-order correlations in Appendix E, Table E4). Standard errors, given in parentheses, are adjusted for autocorrelation within individuals across years (* p < .05; ** p ≤ .001).

Table 4.2 in Neighbor Networks (from Table 3 in Burt, "Secondhand Brokerage" (2007, Academy of Management Journal).
Implication of Absent Spillover from Neighbor Networks

The advantage of network brokers is less about access to diverse information than it is about personal skills in processing diverse information.

People who operate in a network of diverse contacts — that is to say, network brokers — develop personal skills with similarity and analogy needed to facilitate communication between people who think differently.

Those skills make them more able to arbitrage information across groups, but developing those skills requires direct, personal engagement with diverse contacts. In short, the social capital of brokerage is concentrated in ego’s personal network.

From the prologue to Neighbor Networks:

The moral I take away from this book is a bit of Confucian wisdom often ignored in social network analysis: “Worry not that no one knows you, seek to be worth knowing.” The old saying speaks to a tension we all feel at one time or another, a tension between hope and suspicion. The hope: people are rewarded for their ability and effort. The suspicion: rewards go to people with well-connected friends.

I present evidence on analysts, bankers, and kinds of managers showing that rewards in fact do go to people with well-connected colleagues. Look around your organization. The individuals doing well tend to be affiliated with well-connected colleagues.

The advantage obvious to the naked eye is spurious. It disappears when the individual’s own characteristics are held constant. ... The research to be presented shows that affiliation with well-connected people adds stability but no advantage to a person’s own connections. Advantage is concentrated in people who are themselves well-connected. ... In the words of Confucian disciples, “seek to be worth knowing.” For readers more down home, there is the immortal Billie Holliday, “God bless the child that’s got his own.”
## Results on Third Hypothesis (Burt & Wang, Table 4)

<table>
<thead>
<tr>
<th>Model 5</th>
<th>Model 6</th>
<th>Model 7</th>
<th>Model 8</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Z-Score Salary</strong></td>
<td><strong>Z-Score Idea Value</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summary F(11,440) test for association with controls for manager differences significant in Burt (2004) for predicting compensation and idea value (job rank, purchasing, age, minority, education, high and low-tech division, either of two expensive urban offices)</td>
<td>73.73 ***</td>
<td>73.85 ***</td>
<td>2.51 **</td>
</tr>
<tr>
<td>Network Constraint</td>
<td>-.32 (.08) ***</td>
<td>-.41 (.04) ***</td>
<td>-.51 (.14) ***</td>
</tr>
<tr>
<td>Mutual Contacts</td>
<td>.01 (.01)</td>
<td>——</td>
<td>-.001 (.02)</td>
</tr>
<tr>
<td>Exclusive Density</td>
<td>.000 (.001)</td>
<td>——</td>
<td>.002 (.002)</td>
</tr>
<tr>
<td>Bridge Supervision (BS)</td>
<td>——</td>
<td>-.04 (.05)</td>
<td>——</td>
</tr>
<tr>
<td>BS * Network Constraint</td>
<td>——</td>
<td>.16 (.15)</td>
<td>——</td>
</tr>
<tr>
<td>Intercept</td>
<td>1.58</td>
<td>1.96</td>
<td>1.39</td>
</tr>
<tr>
<td>R²</td>
<td>.76</td>
<td>.76</td>
<td>.15</td>
</tr>
<tr>
<td>F(2,440) Test No Bridge Supervision Effects</td>
<td>.49</td>
<td>.75</td>
<td>.91</td>
</tr>
<tr>
<td>Probability No Bridge Supervision Effects</td>
<td>.61</td>
<td>.47</td>
<td>.40</td>
</tr>
</tbody>
</table>

Note — These are OLS regressions predicting z-score salary (Models 5, 6) and value of manager idea (Models 7, 8). Robust standard errors are in parentheses (Stata “robust”). Network constraint is entered as log constraint, and measured as a deviation from its mean in defining interaction terms. “Mutual Contacts” is the number of contacts mutual to manager and boss. “Exclusive Density” is the density of connections among manager contacts not connected directly with boss. “Bridge Supervision” is a binary variable defined by the shaded area in Figure 3. * P < .05  ** P < .01  *** P < .001
Performance-Brokerage Link

Is Unaffected by Bridge Supervision  (Burt & Wang, Figure 5)

(Note — Regression lines are estimated through the plotted data, which are averages within 5-point intervals of network constraint, with scores higher than 60 points combined in one category because of few observations.)
Research Question: Correlates of Bridge versus Embedded Supervision

Foundation: Performance Advantage of Network Brokers (The theme in this paper is that behavior/emotion are a function of person in social context. Solomon Asch [1952:61]: “Most social acts have to be understood in their setting, and lose meaning if isolated. No error in thinking about social facts is more serious than the failure to see their place and function.” Personal network is manager’s immediate social context.)

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(H3) Performance Implications of Bridge Supervision

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Time (networks and supervision, initial versus established)
Agency (origins have implications for evidence; boss, manager, workplace)
Scale (Schelling macro consequences of micro behavior)
Conclusion & Some Ideas for Future Research

Bridge Supervision affects manager behavioral and emotional style (H1-2) but not quality of performance (H3)

Replication for Reliability & Generalization

If the results from this study hold up in replication studies, then the widening use of bridge supervision can be expected to have behavioral and emotional consequences for work life, but not necessarily performance consequences. We drew on the Bott Hypothesis to infer that bridge supervision should be associated with manager-boss role segregation in the form of separate decision making, less privacy, a lower sense of homophily, and less emphasis on personal compatibility (Table 1). What about other behaviors in the Bott Hypothesis — now implied by bridge supervision — and what about the broader range of behaviors and emotions studied in leadership research? Leader-member exchange theory (LMX) is especially promising because it defines multiple dimensions of the supervisory relationship. Which LMX dimensions are associated with bridge supervision?

Note that the replication research can be conducted easily with data already in hand for many scholars. In a management population for which network and performance data are available, all one has to do is identify each manager’s boss, assemble the dyad network around each manager-boss pair, then compute network measures to test the hypotheses.

EXAMPLE: I’m working with a colleague now in a population with a different macro structure (center-periphery vs. silos in study pop): “Contingent Bridge Supervision”
Some Ideas for Future Research (cont.)

Time (relations and supervision over time)
- **Effect on new versus established relations** (7.6 yr mean in study pop)
- **Temporary vs long-term bridge supervision** (Association with indicators of disengagement such as decreased average productivity, poor attendance at company events, low average job satisfaction, frequent sick days, missed deadlines, and of course, exit?)

Agency (origins have implications for evidence; boss, manager, context)
- **Intentional bridge supervision** (boss thinks well vs ill of manager)
- **Unintentional bridge supervision** (tight budget, span of control)

Scale (Schelling macro consequences of micro behavior)
- **Threshold** (Bridge supervision is 40% in study pop. What if 90%? Is there a threshold, a tipping point, at which the system breaks down because bridge supervision is alienating too many managers? When does a neighborhood become a slum?)
- **Occupational characteristic** (We report on bridge supervision as an individual difference, but the subject can be studied equally well in terms of work cultures associated with widespread bridge supervision. For example, free-lance writers operate under bridge supervision from a contracting publisher. Regional managers operate under bridge supervision from corporate headquarters. To what extent are the supervision role segregation dimensions in Table 1 correlates of being free-lance, or leading a field office?)
Appendices

slide on creating value by bridging structural holes

slide on lower return to brokerage at lower ranks

slide on network brokers more likely to offer good ideas

slide on pos/neg emotions

correlations for study population (Burt & Wang, Table 3)
Create Value by Bridging Structural Holes

STICKY INFORMATION
Information expensive to move because: (a) tacit, (b) complex, (c) requires other knowledge to absorb, or (d) interaction with sender, recipient, or channel.

STRUCTURAL HOLE
disconnection between two groups or clusters of people

BRIDGE
relation across structural hole

NETWORK ENTREPRENEUR
or "broker," or "connector."
a person who coordinates across a structural hole

BROKERAGE
act of coordinating across a structural hole

Research shows that employees in networks like the AFTER network, spanning structural holes, are the key to integrating operations across functional and business boundaries. In research comparing senior people with networks like these BEFORE and AFTER networks, it is the AFTER networks that are associated with more creativity, faster learning, more positive individual and team evaluations, faster promotions, and higher earnings.

*Network scores refer to direct contacts.

Here is the core network for a job BEFORE and AFTER the employee expanded the network advantage of the job by reallocating network time and energy to more diverse contacts.

It is the weak connections (structural holes) between contacts in the AFTER network that provides expanded network advantage.

The employee AFTER is more positioned at the crossroads of communication between social clusters within the firm and its market, and so is better positioned to craft projects and policy that add value across clusters.

From Figure 1.4 in Burt (1992, Structural Holes), and Figure 1.2 in Brokerage and Closure. See Appendix I on survey network data, Appendix II on measuring network constraint.
SOCIAL STANDING: Broker Job Status Reassures, or Lack of It Concerns, the Target Audience

Which means the network around a senior person is especially important for his or her achievement.

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<tr>
<th>Salary</th>
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<td>Manager 2</td>
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<tr>
<td>Purchasing</td>
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<td>N</td>
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Graphs for executives, managers, and junior managers to the right show z-score compensation relative to peers (controlling for background differences) across levels of network constraint. Not only do more senior people have more open networks (on average), they earn higher returns to having open networks (also pay more if they don’t have an open network).

Table to the left is from page 371 of Burt, "Structural holes and good ideas" (2004, American Journal of Sociology).

See pp. 156-162 and Figure 3.8 in Brokerage and Closure for general discussion showing the form of contingency functions.
Network Brokers Are More Likely to Propose Good Ideas

\[ Y = a + b \ln(C) \]

across 455 managers

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P(no idea) 11.2 logit test statistic
P(dismiss) 5.5 logit test statistic

"...for those ideas that were either too local in nature, incomprehensible, vague, or too whiny, I didn't rate them"

from Figure 2.1 in Brokerage and Closure (or Figure 5 in Burt, "Structural holes and good ideas," 2004 American Journal of Sociology, point is elaborated in Burt and Soda, "The social origins of great strategies," 2017 Strategy Science).
Brokers Are More Likely to Express Emotion when Pitching an Idea

(Scores are averaged within 5-point intervals of network constraint. Logit z-score tests for association with network constraint are reported in parentheses)

Figure 8.7 in Neighbor Networks. See Appendix V for detail on emotions within sentences. Also see HBR pieces by Goleman (1998) on the "emotional intelligence" of leaders, Hallowell (1999) on the "human moment" at work, and Casciaro and Lobo (2005) on "Competent jerks and lovable fools."
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