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Jargonization, Language Development, and Team Performance

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Abstract: The emergence of team-specific vocabulary and language ("team jargon") is a natural consequence of sustained, knowledge-intensive work. We examine how jargonization—the emergence of specialized shorthand—affects both the speed of language development and its implications for team performance. We argue that the explicit and mutually understood nature of team jargon reduces ambiguity, thereby facilitating language development and minimizing misunderstandings that could otherwise hinder coordination. Empirical analysis of language formation among newly formed teams assigned a symbol identification task supports this argument. We operationalize jargonization as the proportion of content words in team communications. Our findings indicate that as jargonization increases, the relationship between experience and language development strengthens, and the positive language effect on team accuracy increases in magnitude.

Keywords: Teams, jargon, language development, problem-solving, performance, learning

Reproducibility Package: A replication package has been deposited to OpenICPSR (https://www.openicpsr.org/openicpsr/project/239292/version/V1/view) that contains code and data required to reproduce the results presented in the article.

Team jargon naturally emerges through learning by doing, particularly in knowledge-intensive settings. As team members gain experience working together, they develop work routines and practices and cultivate a shared vocabulary and language critical to their success. At the core of this language is team-specific jargon, which evolves through repeated collaboration, especially under time pressure. More than a set of technical terms, team jargon streamlines communication by reducing the need for elaborate explanations (Weber and Camerer 2003). With experience working together, what team members know and do increasingly becomes tacit knowledge. As team activities and language coevolve, jargon emerges as a mechanism for expressing this tacit understanding, allowing members to exchange expertise and communicate complex ideas efficiently and effectively (Krauss and Fussell 1991).

Jargon emerges through the creation of new terms or the redefinition of familiar words with context-specific meanings. Within the MIT community, for example, a "smoot" is a recognized unit of measurement, whereas to outsiders it remains unintelligible. Similarly, the term "hosed," which conventionally refers to being sprayed with water, has been appropriated by MIT undergraduates to describe the cognitively overwhelming experience of learning, as in "like drinking from a firehose."

The term jargon carries two widely recognized meanings. The first is descriptive, referring to the specialized language used by members of a group or community,

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including professions, trades, and organizational units. The second is normative, emphasizing jargon's exclusionary and often pretentious nature. In both senses, jargon operates as a signal of group membership. Jargon use can reinforce boundaries between insiders and outsiders, thereby impeding communication and coordination across groups (Dougherty 1992). For example, specialized language can hinder knowledge transfer between academic disciplines (Vilhena et al. 2014; Lucy et al. 2022). Yet, jargon can also strengthen cohesion within groups by reinforcing a shared identity, particularly when it affirms group distinctiveness. Individuals in lower-status positions are often more likely to use jargon, potentially as a strategy to assert their insider status (Brown, Anicich, and Galinsky 2020).

Jargon is ubiquitous in professional settings where coordination under time pressure is essential. In sports, for example, Patrick Mahomes might call "Tom and Jerry," a play in which "Tom" signals an inside zone run and "Jerry" indicates a pulling guard. In a trauma unit, a surgeon might say, "We've got a hypotensive blunt trauma. Massive transfusion protocol, type and cross, give O neg now. Let's get FAST and chest X ray stat." This compact statement coordinates a sequence of high stakes actions: recognizing the injury, initiating transfusion with universal donor blood, and ordering immediate diagnostic imaging. In such environments, jargon functions not only as a linguistic shorthand but also as a mechanism for aligning team members around shared understandings and expectations, enabling rapid and reliable action.

We examine the informational advantages that team-specific jargon creates and the learning benefits that follow. Team jargon represents a subset of a team's shared language. Just as a team's language both enables and results from learning by doing, jargon can be both a product of and a contributor to language development. It can accelerate language formation and shape how effectively that language supports team performance. Prior research shows that communication patterns within a team influence both the rate of language development and its performance implications (Reagans, Volvovsky, and Burt 2023). Direct communication speeds the development of a shared language but limits its value for performance. Communication gaps slow language development but enhance its effectiveness.

We expect jargon use to facilitate language development. Jargon is explicit and collectively understood among team members, reducing ambiguity in communication. The decline in ambiguity makes it easier for teams to agree on when and how to revise their existing vocabulary and what meanings to assign to emerging terms. Jargon use also limits misunderstandings that can undermine language-based coordination. The result is a shared language that develops more rapidly and is more effective in supporting team performance.

We test these ideas using a symbol identification task in which teams collaborate to identify abstract symbols, specifically tangrams, across up to 15 trials (Fig. 1). Each symbol could be described in multiple ways, and the labels shown beneath each symbol in Figure 1 illustrate the terms and phrases teams used during the final trials. Team success depended on developing a shared vocabulary under time constraints that encouraged concise communication. Burt and Reagans (2022) showed that, in this task, team messages evolve into jargon as collaboration progresses. With experience, teams not only reduce the number and length of their messages but also change their composition. The relative frequency of content words (nouns, verbs,

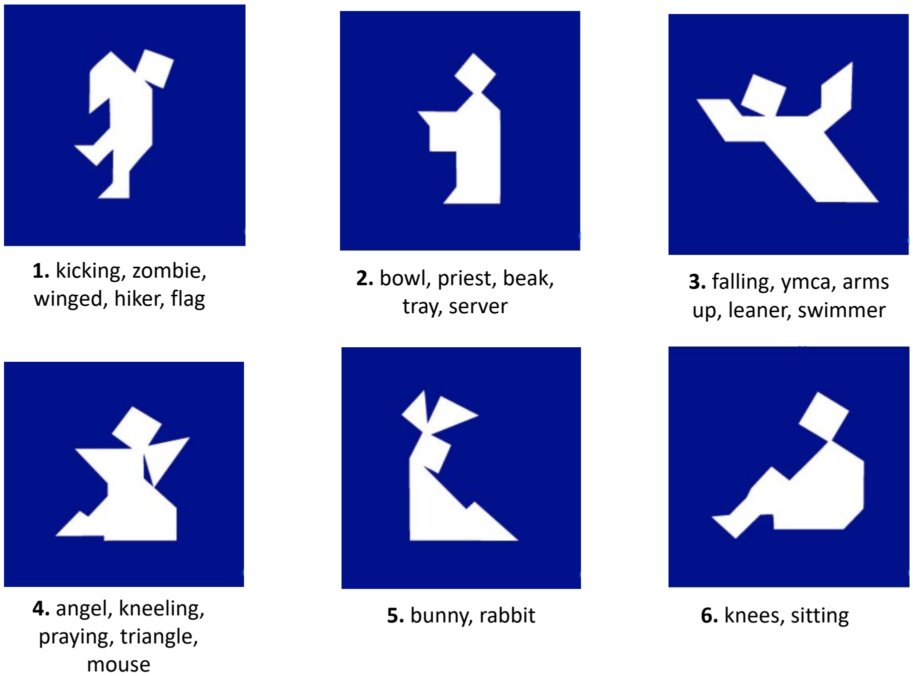

Figure 1: Team members work together to identify abstract symbol. To succeed, teams must first develop a common vocabulary for describing the symbols.

and adjectives) increases, whereas reliance on function words (prepositions and conjunctions) declines. Content words convey meaning, whereas function words such as "in," "with," "and," or "but" clarify relationships among them. Function words are essential in everyday communication, but as teams gain experience, they develop a shared shorthand that renders such words unnecessary.

Following Burt and Reagans (2022), we operationalize jargon use—hereafter referred to as "jargonization" (Good 2013)—as the proportion of content words in team communication. The empirical results show that as jargonization increases, both the positive effect of experience on language development and the positive effect of language on team accuracy grow in magnitude.

Literature Review

Teams are an integral part of contemporary organizations. Rather than merely being a collection of individuals, teams function as dynamic platforms for applying and integrating diverse knowledge and expertise (Hinsz, Tindale, and Vollrath 1997; Argote, Gruenfeld, and Naquin 2001). Teams help organizations to bridge the gap between what they know and what they can achieve.

Two key concepts explain how teams manage and share knowledge: shared mental models and transactive memory systems. A shared mental model refers to the collective understanding that team members develop around tasks, goals, and processes (Klimoski and Mohammed 1994), reflecting alignment in expectations and knowledge. A transactive memory system captures how knowledge is distributed, with individuals specializing in distinct domains and the team functioning as a collective knowledge repository (Wegner 1987).

A team's shared language sits at the intersection of these concepts. It reflects both the team's collective understanding and its means for integrating distributed knowledge (Reagans, Miron-Spektor, and Argote 2016; Koçak and Warglien 2020). As teams interact, their language evolves, encompassing technical terms, shorthand expressions, nonverbal cues, and shared interpretations that streamline communication, particularly under time pressure and uncertainty (Faraj and Sproull 2000).

This evolving language is both a product of and a mechanism for learning by doing (Argote and Miron-Spektor 2011). With experience, a team's language can crystallize into team jargon, specialized context-specific terms that serve as cognitive shortcuts. Jargon reduces the need for explicit elaboration, allowing teams to focus on execution rather than clarification (Weber and Camerer 2003). Team jargon is how team members communicate condensed understandings gained through shared problem solving (Krauss and Fussell 1991).

Jargon enhances communication and collaboration by enabling a distinctive form of coordination. Our traditional understanding of coordination holds that it is either programmed, meaning implicit and routinized, or unprogrammed, meaning explicit and communication intensive (March and Simon 1958). Jargon-based coordination blends these forms by supporting implicit understanding while retaining explicit linguistic form. Upon hearing a jargon term, team members instinctively know how to act. The term is explicit, but its implications are internalized. A useful analogy is speaking a foreign language: a speaker of a second language remains broadly aware of their native language. Similarly, team members using jargon implicitly understand the associated actions, even though the language itself remains explicit.

Because jargon is a subset of language, and language development both results from and facilitates learning by doing, we expect jargon to function similarly. Its explicit and mutually understood nature reduces communication ambiguity. Jargonization and the corresponding decline in ambiguity should make it easier for team members to introduce new terminology, either by adapting existing terms or inventing new ones. The decline in ambiguity should also reduce misunderstandings in language-based coordination, resulting in a language that is more beneficial for performance. These observations lead to two predictions.

> Hypothesis 1: Jargonization increases the magnitude of the positive experience effect on language development.

> Hypothesis 2: Jargonization increases the magnitude of the positive language effect on team accuracy.

Before turning to the discussion of our experimental design, we note that the hypotheses we will test were not pre-registered. They build directly on prior research (Burt and Reagans 2022; Reagans et al. 2023) but should nonetheless be interpreted with appropriate caution.

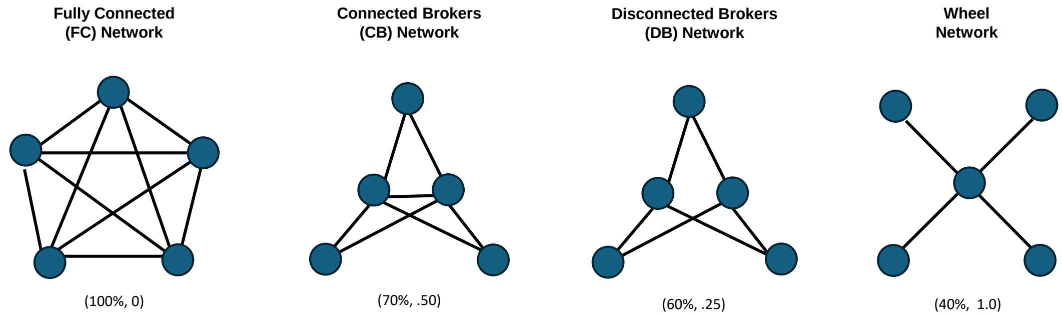

Figure 2: Four team networks. Teams are randomly assigned to one of four communication networks that differ in centralization. In centralized networks (e.g., the wheel network), communication channels are organized around a single team member. In decentralized networks (e.g., the FC network), communication channels are evenly distributed among all members. The two broker networks are intermediate structures that combine features of both centralized and decentralized networks. *Note:* Network density (i.e., the proportion of observed over possible ties) and degree-based centralization are in parentheses.

Experimental Design

The experiment was conducted online using the Empirica platform (https://empirica.ly). The experiment builds on classic MIT studies from the 1950s by Bavelas (1948, 1950), Smith (1950), and Leavitt (1949, 1951), which considered how team communication networks impact performance on tasks such as symbol identification. Shaw's (1964) review offers a good summary of these foundational studies.

Participants were U.S. residents recruited through Prolific (https://www.prolific.co). Each participant was paid a prorated rate of $8 for the hour-long study, with an additional bonus of $1 for each correctly identified symbol. To ensure data quality, potential participants were required to pass several screening steps: a 10-question English language test (minimum score of 8/10), a tutorial on the experiment, and subsequent comprehension and attention checks (4/4 correct). They were also described a tangram and shared information about their personal networks before moving to the main experiment, which took place two days later, scheduled based on their availability.

At the start of the experiment, participants received a refresher on the task, compensation details, and the policy on inactivity (anyone inactive was removed and ineligible for the bonus). After agreeing to the terms, participants waited in a virtual lobby until a group of five was ready, then were randomly assigned to one of four different network structures illustrated in Figure 2.

The team's communication network is an important control variable in our analysis. Prior research has shown that a team's communication network affects both the rate of language development and its implications for performance (Reagans et al. 2023). The networks in the experiment vary in centralization: the wheel network is the most centralized, whereas the fully connected (FC) network is the least.[1] The wheel network contains one central team member. The two networks in the middle of the figure contain two central team members and strike a balance between the wheel and the FC network. The difference between the two networks in the middle is the connection between the two central team members in the connected brokers

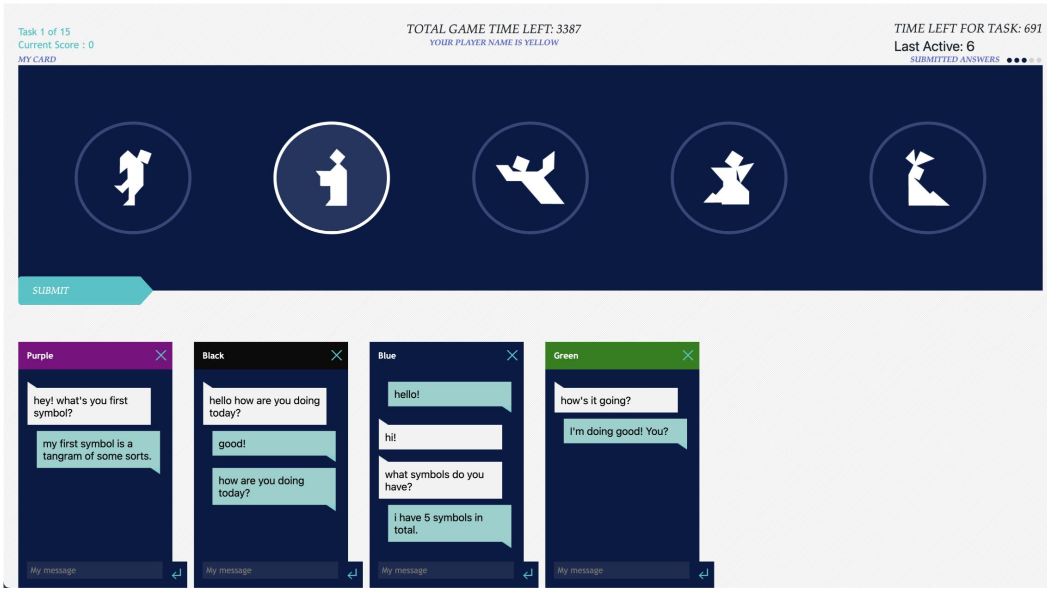

Figure 3: Example subject screen.

(CBs) network. The central team members in the disconnected broker (DB) network are not connected.[2]

Participants worked together to identify a shared symbol, or tangram, from their unique sets. Figure 3 shows an example of a participant's screen, where tangrams are labeled "My Card." The interface also displayed team progress, remaining time, and if a player was inactive for more than 180 s. In each trial, teams had one shared tangram across all sets, and participants communicated through color-coded chat boxes corresponding to their available communication channels based on the network structure.

In the FC networks, participants could access multiple chat boxes, whereas peripheral members in the wheel network had only one. The central broker in the wheel had four. Teams used these chat boxes to describe their tangrams until they felt comfortable guessing the shared one. Once all members submitted their answers, the trial ended, and feedback was provided ("Correct" or "Incorrect"). The experiment had up to 15 trials.

In total, 465 participants were split across 93 teams, with roughly equal numbers assigned to the four network types: 23 teams each in the FC, wheel, and CB networks, and 24 in the DB network.

Results

Team Communication: Efficiency

Our research question centers on how jargon intensity shapes language development. We begin by examining more general changes in team communication. The symbol identification task requires language-based coordination: effective teams

Table 1: Sustained collaboration improves communication efficiency.

	Number of Messages		Words Per Message		Trial Time (min)		Jargonization		Shared Language	
	Median	IQR	Median	IQR	Median	IQR	Median	IQR	Median	IQR
Trial										
1st	104.00	74.00	7.90	2.26	8.87	6.10	0.51	0.04	0.26	0.09
5th	64.00	45.00	6.44	2.54	4.18	3.52	0.62	0.09	0.34	0.18
10th	41.00	22.00	4.48	1.15	1.73	2.07	0.75	0.16	0.46	0.20
15th	34.50	20.50	4.62	1.19	1.23	0.72	0.76	0.16	0.57	0.16

must agree on the terms and phrases used to describe symbols, and under time pressure, they have strong incentives to communicate both consistently and efficiently.

Table 1 summarizes how sustained collaboration shapes the basic elements of team communication—the number of messages exchanged, their average message length, and the total duration of communication across trials. The experiment could continue for up to 15 trials, though only about one in five teams completed all 15; the median team completed 10. For each variable, we report the median and the interquartile range to capture both the central tendency and variation across trials.

The results indicate that with sustained collaboration, team members communicate less frequently, more succinctly, and over shorter intervals. The number of messages declines sharply—from a median of 101 in the first trial to 35 by the fifteenth. Communication duration follows a similar pattern, dropping from 9 min to roughly one. Message length decreases more gradually, from eight words per message in the first trial to five in later trials. Because teams are tasked with identifying one shared symbol from a set of five, their messages often reference all five symbols displayed on their cards rather than describing each in a separate message. The five-word floor in message length therefore reflects the minimum linguistic requirement for completing the task. Taken together, these changes indicate that repeated collaboration produces increasingly efficient communication, both in volume and duration.

Team Communication: Content

By the final trials, team communication consisted almost entirely of labels. To identify the shared symbol, team members listed the labels corresponding to the figures on their cards. The words and phrases at the bottom of Figure 1 represent labels frequently used during the final three trials of the experiment. For instance, the dominant labels for the sixth symbol involve variants of "knees" and "sitting" ("knees," "sitting," "knees up," "sitting left," and "man sitting left with knees up"), whereas the fifth symbol is typically labeled "bunny" or "rabbit," occasionally "bunny ears." A small number of teams used alternatives such as "triangle," "llama," or hybrids of the two.

Labels for the remaining symbols exhibit greater variation. The fourth symbol was variously labeled "angel," "kneeling(er)," "pray(ing)," "triangle," or "mouse." The third was described with terms such as "falling," "arms up," "leaner," "swimmer," or "YMCA" (and variants like "Y pose" or "Y person"). The second symbol showed more convergence, with frequent labels including "priest," "book," "bowl," "tray," and "server." The first symbol elicited the most idiosyncratic terms with "kicking" or "zombie" being common, alongside "winged," "one leg," "hiker," "beak," and "flag."

These labels constitute shorthand, marking the culmination of two major shifts in communication.[3] Early messages centered on task coordination and clarification—for example, "You don't have other folks," "I still have the sitting man, T. rex, rabbit, and random figures," or "Tell me what you got," "Ah, must've been a miscommunication then." Early exchanges also revealed variation in naming strategies. Teams began by describing the abstract symbols using geometric features ("smaller," "top," and "sideways") or inferred actions ("making," "taking," and "wearing"). With experience, these long, descriptive statements gave way to concise, fixed labels ("handmaiden," "queen," "projector," "pointer," and "winner"). These labels served as referential codes, enabling efficient and precise communication.

This shift—from process to naming and from description to labeling—is mirrored in teams' use of parts of speech. Early messages combined content words (nouns, verbs, and adjectives) with numerous function words (prepositions and conjunctions) that provided grammatical scaffolding. For instance, in "I have an image that has rabbit looking ears on top of a square head on top of a triangle," content words (image, rabbit, ears, square, head, and triangle) convey meaning, whereas function words (I, have, an, that, has, on, of, and a) provide structure. By the final trials, messages were reduced to compact lists such as "priest, swimmer, kneeler, bunny, sitter," composed entirely of content words functioning as team code. Some teams used minimal codes, whereas others adopted more elaborate systems such as "penguin/pitcher, monk/priest, guy with tail and arms spread out, mouse/rabbit, sitting left guy."

The results reported in the fourth column of Table 1 document this transformation quantitatively. With experience, teams increasingly relied on content words, reducing the use of function words. The median proportion of content words rose from 46 percent in the first trial to 58 percent in the fifth, 71 percent in the tenth, and 76 percent in the final trial. This proportion of content words serves as our indicator of jargonization, the extent to which a team's language becomes compressed and codified through sustained collaboration.

In addition to the shift in composition, team messages become more similar. To measure message similarity, we represent team messages as vectors, and we use cosine similarity to quantify the degree of similarity between messages. u and v are consecutive messages represented as vectors[4]

$$\text{message similarity} = \theta = \frac{uv}{\|u\|\,\|v\|}.$$

Our approach measures the similarity in the meaning of messages and not simply similarity in the words messages contain. "How are you?" and "How old are you?" contain similar words but have very different meanings. "How old are you?" and "What is your age?" contain different words but have similar meanings. Cosine similarity is 0.36 in the first case and 0.92 in the second.

The level of shared language development is calculated using messages exchanged within team trials. For each team trial, we calculate the level of similarity between consecutive messages. The similarity scores are averaged within team trials to create our language development variable ($\bar{\theta}$). The level of language development on the first, fifth, tenth, and fifteenth trials is reported in the final column of Table 1. Repeated collaboration gives rise to a shared language among team members. However, teams develop their language at different rates, as reflected by the widening interquartile range of the language development variable in later trials.

The proportion of content words team members use serves as our indicator of jargonization. Jargonization is a component of a team's shared language. Although the two measures are related ($r = 0.72$), they are distinct. Jargonization tends to increase as teams develop a shared language, but as a shared language develops, the extent to which that language becomes jargonized differs substantially across teams. Among teams in the lowest decile of the language development variable, the median level of jargonization is 0.23 (interquartile range = 0.02). In the fifth decile, the median rises to 0.34 (interquartile range = 0.02). At the top decile, the median increases to 0.67, with a wider interquartile range of 0.10. These patterns suggest that while teams converge linguistically as they work together, they diverge in the extent to which their shared vocabularies are jargon heavy.

Language Development and Team Accuracy

Our focus is on the association between jargonization and language development, in terms of how quickly a shared language develops and how effectively that language supports performance. Our empirical analysis draws on 836 trials conducted across 93 teams, with multiple observations per team. To account for unmeasured team differences and the endogeneity of language development (which is shaped by jargonization and affects performance), we estimate a two-stage regression equation that includes team "fixed" effects (Mundlak 1978; Wooldridge 2010).[5]

Language development is measured as the average message similarity within a trial. Team performance is measured by team accuracy, defined as the number of team members correctly identifying the shared symbol on a trial. The performance equation follows a binomial distribution with an upper limit of five, the possible number of correct responses on a team (Wooldridge 2010).

We expect jargonization to increase the magnitude of the positive effect experience has on language development. Experience is measured as the natural log of the trial number. Our models also include several controls. We control for message rate, defined as the number of messages exchanged per minute. In addition, some teams leave before reaching the fifteenth trial. The tenth trial serves as a critical juncture, as multiple teams exit during or immediately after this point. To adjust for the potential influence of these dynamics, we include dummy variables indicating whether the focal trial is the tenth or the team's final trial (excluding the fifteenth).

Descriptive statistics for the variables used in our analysis, along with regression results, are reported in Tables A1 and A2 of the online appendix. Before turning to the results for jargonization, we first summarize the effects of the different network conditions. As noted earlier, prior research shows that a team's communication network influences language development. To account for these effects, we include interactions between the trial variable and the indicators of network structure in the language development equation, and interactions between the network structure

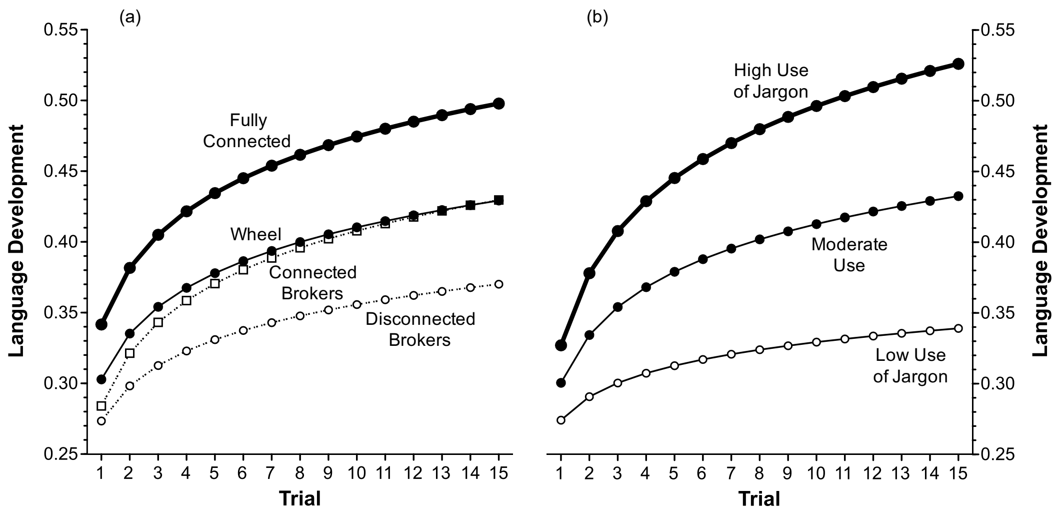

Figure 4: (a) Language develops most easily in FC teams. (b) Language development facilitated by jargon use.

indicators and the language development variable in the team accuracy equation. The first set of interactions estimates how the magnitude and direction of the experience effect on language development vary across network structures. The second set assesses how network structure moderates the relationship between language development and team accuracy. The regression results are summarized in Figures 4 and 5, which display simple slopes calculated using the MARGINS command in STATA (Williams 2012).

The observed network effects are broadly consistent with the findings from Reagans et al., but there are also important differences. Reagans and his colleagues observed that while centralized teams encountered difficulties in language development, their slower progression ultimately yielded a shared language that was more beneficial for team performance. The wheel network represents the most centralized network, and the FC network is the least centralized. The results in Figure 4a indicate that language developed faster in our FC teams than our wheel teams. The results in Figure 5a indicate that our wheel teams derived greater benefits from the language they developed.

Our results diverge from those of Reagans and his colleagues with respect to the CB and DB teams. In our experiment, the CB teams initially struggled to develop a shared language. Reagans and his colleagues assumed that the relationship between the two central individuals in the CB network would facilitate coordination. In contrast, the two central individuals in our CB teams competed until a clear leader emerged—a dynamic that likely slowed language development (Burt, Reagans, and Opper 2024). In comparison, the two central individuals in the DB teams showed no signs of competition. These teams instead faced coordination challenges arising from the absence of a direct tie between the two central members, which made communication more difficult and delayed language development. Despite these differences, our network effects are broadly consistent with those reported by Reagans and his colleagues: DB teams were slower to develop a shared language but benefited most from it once it emerged.

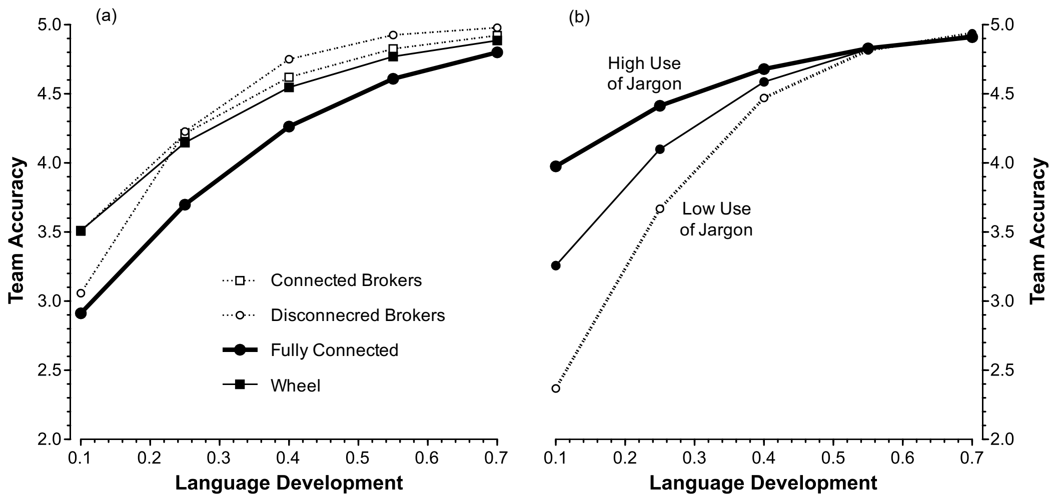

Figure 5: (a) Shared language–team accuracy association is weaker in FC teams. (b) Jargon use strengthens the shared language–team accuracy association when language is developing.

Measurement is one plausible explanation for these differences. Reagans and his colleagues represented each message as a vector by averaging the word vectors it contained (Le and Mikolov 2014). When we applied the same method, our results closely matched theirs, revealing the most consistent contrast between FC and centralized (CB, DB, and wheel) networks. Although language developed more rapidly in FC networks, its positive effect on team accuracy was greater in centralized networks (Reagans et al. 2024, pp. 12–13).

The jargonization results are shown in Figures 4b and 5b. The three lines in Figure 4b correspond to levels of jargonization: one standard deviation below the mean, at the mean, and one standard deviation above the mean. The horizontal axis is the trial variable, and the vertical axis is language development. The findings support our first prediction. By trial 5, a one standard deviation increase in jargonization raises the language variable by 0.066. By trial 10, the increase is 0.083, and by the final trial, the gain reaches 0.094. Language develops more quickly with experience with jargon use.

The results in Figure 5b illustrate the language effect on team accuracy for three levels of jargonization: one standard deviation below the mean, at the mean, and one standard deviation above the mean. The horizontal axis is the level of language development. The vertical axis is team accuracy. The findings indicate that jargonization can increase the magnitude of the shared language effect on team accuracy, but the positive effect occurs at low levels of language development.

When language development is two standard deviations below the mean, increasing jargonization from one standard deviation below the mean to the mean raises team accuracy by 0.77. An increase in jargonization from the mean to one standard deviation above the mean raises accuracy by 0.70, with both effects significant at the 0.05 level. When language development is one standard deviation below the mean, the corresponding increases are 0.44 and 0.36, both significant at the 0.05 level. When language development is above the mean, increases in jargonization do not affect the magnitude of the shared language effect on team accuracy. Team accuracy equals 4.65 when the shared language variable is one standard deviation above the mean and equals 4.80 when it is two standard deviations above the mean. The maximum number of correct responses is 5. When the level of language development is above its mean, there is little scope for further improvements in team accuracy.

It is useful to step back and consider the outcomes associated with jargon-based coordination in relation to those associated with network structure. Both network and jargon-based coordination accelerate language development. Our results show that language develops fastest in FC networks and slowest in DB networks. Compared to DB networks, we observe faster language development in wheel and CB networks, despite their potential for coordination failures. The key word is potential. The absence of a direct connection between the two central individuals in DB teams consistently made coordination more difficult.

Consistent with prior research, we also find that the same network structures that facilitate coordination can reduce the value of the language that teams develop. FC teams develop a shared language quickly but DB teams develop a language that can be more beneficial for performance. FC teams benefit least from their language, and the sharpest contrast is between FC and non-FC teams. In general, network-based coordination yields a tradeoff between the speed of language development and the value of the resulting language. There is no such tradeoff with jargon-based coordination: high jargon use accelerates language development while simultaneously enhancing the value of the language that teams develop.

Summary and Discussion

Our research examines the relationship between team jargon and language development. Just as language development enables and emerges from learning by doing, team jargon reflects and facilitates language development. Team jargon is distinctive: it enables implicit coordination while remaining explicit in form. Upon hearing a jargon term, team members instinctively understand what to do, even as the term itself remains overt in communication. A useful analogy is foreign language use. A speaker of a second language remains broadly aware of their native language; similarly, team members using jargon implicitly grasp the associated actions, even though the language itself remains explicit.

We expected jargonization to accelerate language development and strengthen the positive relationship between developed language and team performance. Our expectations rest on the premise that increases in jargonization reduce ambiguity, making it easier for team members to decide when and how to modify their vocabulary. Reduced ambiguity should also limit misunderstandings that can arise during language-based coordination. As a result, teams are better able to refine a linguistic system that supports performance. Our empirical results are broadly consistent with these expectations.

Our findings contribute to understanding how language develops within teams and evolves into team-specific jargon. They also offer broader implications for learning in teams and organizations. Learning by doing is a foundational process in organizations (Argote, Lee, and Park 2021). Repeated collaboration enables individuals to refine routines and processes through trial-and-error experimentation. Yet in complex, dynamic environments, learning by doing becomes more difficult. Organizations often respond by relying on teams that combine diverse knowledge and expertise to enhance learning through creative problem solving (Hargadon and Bechky 2006). However, teams introduce added complexity: their environment is shaped not only by external demands but also by the interdependent choices of their members.

Given the centrality of teams in organizations, our findings reinforce the importance of language for organizational learning. First, learning by doing involves identifying appropriate actions in specific situations. Organizational learning differs from individual learning in that it is collective and inherently linguistic. Team success requires understanding how expertise is distributed, and language facilitates the recognition and communication of that expertise. Second, language is essential for coordination (Lix et al. 2022). As individuals work together, they must communicate choices and anticipate one another's actions. A common vocabulary allows teams to navigate immediate interactions and develop expectations about future behavior. Effective coordination also depends on a shared awareness of interdependence (Weick and Roberts 1993). Coordination improves when members understand how their actions contribute to the whole. Finally, language ensures correspondence between intent and action during instruction and knowledge transfer. Thus, developed language is foundational for both coordination and collective learning.

We have emphasized the benefits of jargonization and its role in reducing ambiguity. Yet one can also imagine situations in which jargon is used to increase ambiguity. Jargon encodes and represents tacit knowledge and expertise—and knowledge, as Crozier (1964) famously observed in *The Bureaucratic Phenomenon*, is a source of power. In Crozier's classic example, technicians who alone know how to fix the copiers wield disproportionate influence precisely because of informational asymmetry and the ambiguity they can create. Similarly, group-specific jargon can consolidate control over knowledge and information, granting insiders authority over those who lack fluency in the group's specialized language and depend on their expertise. The control of knowledge that Crozier identified can intensify with jargonization, and such control could depend on it.

Beyond its informational role, jargon also functions as a social marker, delineating insiders from outsiders (Dougherty 1992). Few signals of outsider status are stronger than the inability to participate in ongoing conversations. Jargon can harden group boundaries and exclude those unfamiliar with a team's linguistic code. This exclusionary effect extends not only to outsiders but also to individuals seeking to join the team, complicating their integration.

Although our findings reflect contexts where team incentives were aligned, one can easily imagine settings where they are not. Just as lower-status individuals can use jargon strategically to signal belonging and affirm insider status (Brown et al. 2020), incumbents might use it to marginalize newcomers or relegate them to lower-status positions. Thus, while jargon can enhance internal coordination and efficiency, when incentives are misaligned, it can also deepen power asymmetries, undermine collaboration, and reinforce status hierarchies.

The exclusionary effects of team jargon are most often discussed in relation to its impact on intergroup collaboration. Jargon can frustrate cross-team communication, undermining coordination and systemwide learning. Research on symbol-identification tasks demonstrates that FC networks converge more readily on shared vocabularies, whereas fragmented systems produce local languages that inhibit global coordination (Centola and Baronchelli 2015; Guilbeault, Baronchelli, and Centola 2021). Yet, the very structures that fragment learning also sustain it. Differentiated subgroups, which slow convergence, are essential for exploration and adaptation (Levinthal and March 1993; Fang, Lee, and Schilling 2010).

These findings reinforce rather than diminish the importance of language for organizational learning. In differentiated organizations, effective systemwide coordination depends critically on boundary spanners, individuals who maintain ties across groups and units. Such actors translate knowledge into terms that recipients can understand (Allen and Cohen 1969; Reagans and McEvily 2003; Tortoriello, Reagans, and McEvily 2012), effectively serving as linguistic brokers who enable organizational learning across boundaries. In this way, organizational learning rests not only on the development of shared language within teams but also on the presence of linguistic brokers who bridge them.

Evidence from linguistics suggests that jargon itself could serve a similar coordinating function. Jargon can become a linguistic bridge—a medium through which social groups communicate despite limited shared understanding (Reinecke 1938). Such "marginal languages" arise in partially integrated contexts where individuals navigate between distinct cultural or knowledge systems. Examples include transient trade jargons among merchants and sailors, plantation creoles developed among enslaved Africans, and settlers' creoles shaped through selective linguistic blending (Thomason and Kaufman 2023).

Marginal languages typically develop under conditions of sustained intergroup contact. In organizations, ongoing interaction between previously disconnected teams could similarly allow group-specific jargons to evolve into hybrid vocabularies that facilitate systemwide communication and learning. Understanding when, how, and by whom jargon functions as a bridge rather than a barrier remains a promising direction for future research. An important question concerns the emergence and development of individuals who facilitate language-based coordination between groups. Their effectiveness could depend on how they allocate network time and attention: some maintain a balanced distribution of ties across groups, whereas others alternate between deep engagement within one group and periodic outreach to others (Burt and Merluzzi 2016). Which of these brokerage strategies best supports knowledge transfer between language communities remains an open question.

Notes

1 Network effects have been established for related concepts. Argote, Aven, and Kush (2018) illustrate the importance of centralization in the development of a transactive memory system, especially when a team experiences turnover. In more recent work, they examine how centralization and density contribute to the emergence of shared identity, which is beneficial for team performance (Kush, Argote, and Aven, 2025).

2 The four networks also vary with respect to network density. Network centralization refers to how much communication is concentrated through specific members, whereas network density measures the proportion of potential connections that exist between team members. Although these two metrics are related, they are distinct (Butts, 2006). Centralization tends to decrease as density increases, assuming team size remains constant (Anderson, Butts, and Carley, 1999). As team size is held fixed across conditions, the observed differences in centralization are also associated with variations in network density.

3 We applied recent advances in natural language processing that integrate topic modeling with word embeddings to identify the topics that team members discussed during the experiment (Arseniev-Koehler et al., 2022). Word embeddings represent words as vectors—a computational implementation of Firth's (1957) dictum that "you shall know a word by the company it keeps" (Mikolov et al. 2013; Levy and Goldberg 2014; Bojanowski et al. 2017). To extract topics, we applied k-SVD (k Singular Value Decomposition) to the matrix of word vectors derived from the word corpus. This decomposition produces a set of k topics, with each word vector loading on a limited subset of n topics. The model with eight topics, each word associated with four, provided the best fit ($R^2 = 0.86$). Two topics—focused on the task and team processes—accounted for most of the explained variance, underscoring the centrality of coordination. The remaining six captured variation in naming strategies and explained less variance, consistent with teams developing idiosyncratic naming conventions.

4 We use the Universal Sentence Encoder (USE) to represent team messages as vectors and to calculate cosine similarity (Cer et al., 2018).

5 Team fixed effects were estimated as correlated random effects (Mundlak 1978; Wooldridge 2010). The random effects adjust for team-constant unobserved heterogeneity that jointly influences both outcomes (shared language and accuracy) and is correlated with predictors in both equations.

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