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Diplomatic Chameleons: Language Style Matching and Agreement in International Diplomatic Negotiations

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Abstract

Linguistic style refers to how individuals put their words together. This study offers the first application of linguistic style analysis to international multilateral diplomatic negotiations. We hypothesize that agreement in multilateral negotiations is characterized by convergence of diplomats' linguistic styles whereas disagreement associates with divergence of linguistic styles. We test our claim using original data from the plenary sessions of the Constitutional Convention on the Future of the European Union (2002–2003). We evaluate linguistic style convergence by linguistic style matching (LSM) using the text analysis program Linguistic Inquiry and Word Count (LIWC). We find that linguistic style convergence among negotiators was higher in discussions on the legal personality of the European Union that ended with agreement and lower in negotiations on the definition of qualified majority voting that ended with disagreement. This study facilitates a richer understanding of how negotiators' language use influences negotiation dynamics in international multilateral diplomacy and encourages negotiation and conflict resolution scholars and practitioners to pay attention to how diplomats express their policy position in addition to what they say.

A considerable body of research has shown that humans act like chameleons[1] by adjusting and mimicking their verbal and nonverbal behavior to that of others (Chartrand & Bargh, 1999; Chartrand & Lakin, 2013; Lakin, Jefferis, Cheng, & Chartrand, 2003; Stel & Vonk, 2010; van Baaren, Holland, Steenaert, & van Knippenberg, 2003). Scholars have observed mimicry in motor movements (Bavelas, Black, Lemery, & Jennifer, 1986), body positioning (Lakin et al., 2003), gaze (Richardson & Dale, 2005), facial expressions (Dimberg, Thunberg, & Elmehed, 2000), emotional responses (Hawk, Fischer, & van Kleef, 2011), linguistic style (Ireland & Pennebaker, 2010; Niederhoffer & Pennebaker, 2002), and other verbal behavior (Giles, Coupland, & Coupland, 1991). It is a well-established social phenomenon that behavioral matching or mimicry in social interactions is an indicator of positively functioning social dynamics and relationships (Bernieri, Reznick, & Rosenthal, 1988; Chartrand & Bargh, 1999; Giles et al., 1991).

[1]Different terms, such as mimicry, synchronization, adjustment, similarity, accommodation, and matching, have been used to capture and describe the chameleon effect.

Mimicry has been found to increase feelings of liking (Chartrand & Bargh, 1999), feelings of affiliation (Lakin & Chartrand, 2003), and prosocial behavior (van Baaren et al., 2003). Overall, mimicry acts as a "social glue" that helps people to get along with one another (Kavanagh & Winkielman, 2016; van Baaren, Janssen, Chartrand, & Dijksterhuis, 2009). A growing body of research from psychology and communication has demonstrated that a specific kind of mimicry, language style matching—the degree to which conversation partners match each other's linguistic styles—is associated with cooperative outcomes, including group cohesiveness and improved task performance (Gonzales, Hancock, & Pennebaker, 2010), relationship stability (Ireland et al., 2011), empathy and rapport (Niederhoffer & Pennebaker, 2002), increased trust (Swaab, Maddux, & Sinaceur, 2011), and cooperation in conflict resolution (Taylor, 2014).

At the cutting edge of this research agenda is the application of linguistic style analysis to negotiations. Scholars have shown that language style matching is conducive to reaching an agreement in negotiations (Huffaker, Swaab, & Diermeier, 2011; Ireland & Henderson, 2014; Niederhoffer & Pennebaker, 2002; Richardson, Taylor, Snook, Conchie, & Bennell, 2014; Rogan, 2011; Taylor & Donald, 2003; Taylor & Thomas, 2008). However, these insights have not been squarely applied to international diplomatic negotiations. We argue that this is an important void. Thus, the purpose of this research was to examine the role of language style matching in international multilateral diplomatic negotiations.

Underlying much of the existing literature in international diplomatic negotiations is the assumption that only *what* gets said matters. The style and manner by which negotiators communicate with each other has been neglected. There is no doubt that what negotiators say can make or break a deal. However, negotiators' linguistic style, namely *how* they put their words together to articulate a message, is also an important factor in international cooperation. It is a truism to say that humans are highly attentive to how people express their ideas. As enduring discussions on world leaders' use of language indicate, there is much more to communication than content alone in diplomacy. How people express a message makes a difference in how this message is interpreted, which impacts how the speaker's intentions are perceived by conversation partners, and therefore how partners respond (Jervis, 1976; Rathbun, 2014). Just like people have personality or fashion styles, they have linguistic styles. Diplomats are no exception.

In the present research, we provide, to our knowledge, the first application of linguistic style matching to international diplomatic negotiations. We hypothesize that diplomatic negotiations during which actors' linguistic style matching is higher are more likely to be characterized by agreement whereas negotiations marked by lower linguistic style matching are more likely to be characterized by disagreement. We test our hypothesis using original data from verbatim records of the plenary sessions of the Constitutional Convention on the Future of the European Union (2002–2003), focusing on the debates related to the legal personality of the Union and to qualified majority voting that ended with agreement and disagreement, respectively. We evaluate linguistic style matching by the measure of language style matching (LSM; Gonzales et al., 2010) and employ the commonly used text analysis program Linguistic Inquiry and Word Count (LIWC; Pennebaker, Francis, & Booth, 2001). As hypothesized, we find that linguistic style matching among diplomats was higher in discussions on legal personality in which an agreement was reached and lower in discussions on the definition of qualified majority voting where an agreement failed to materialize. This result indicates that the style and manner in which diplomats communicate with each other is an important factor in influencing negotiation dynamics in international politics. Successful diplomatic negotiations are characterized by diplomatic chameleons who accommodate each other's linguistic style. This study builds a bridge between the fields of psychology, international relations, and diplomacy by providing the first application of language style analysis to international multilateral diplomatic negotiations.

This article unfolds in five parts. We begin with a brief review of the negotiations literature in international relations and political science, explaining the value of focusing on the linguistic style of negotiators. We then review previous research on the relationship between LSM and negotiation outcomes and derive our hypothesis. In part three, we describe the current research, starting with

background information on the European CC and issue selection. We then present the method and results followed by a discussion of the strengths and limitations of this research and suggestions for future studies.

Background: The Many Faces of International Diplomatic Negotiations

Broadly, existing explanations of negotiation outcomes can be grouped into three parts: (a) those focused on the structural aspects of the negotiation environment, (b) the process of negotiations, and (c) psychological factors (Odell & Tingley, 2013). In the first group, scholars have emphasized states' bargaining power (Duer & Mateo, 2010; Powell, 1996; Tallberg, 2008); information, uncertainty, and credibility of commitments (Fearon, 1995; Fey & Ramsay, 2011); involvement of international institutions (Mitchell & Hensel, 2007); presence of a mediator (Bercovitch, 1997); institutional structure of the bargaining process (McKibben, 2013); as well as domestic politics and regime type (Schultz, 1999; Weeks, 2008) as the main factors influencing the negotiation game.

Focusing on the process of negotiations, other researchers have explored how the intensity of the conflict (Ghosn, 2010), distributive versus integrative bargaining strategies (Rathbun, 2014), time pressure, and information exchanges (Druckman & Robinson, 1998) influence negotiation outcomes. Group loyalty, size and type of the conflict, audience costs, prenegotiation experience, and negotiator orientation have also been identified as important elements of negotiation processes that impact the outcomes (Druckman, 1994).

A number of scholars have utilized insights from psychology. Researchers have explored how the cognitive complexity (Santmire et al., 1998), social (Rathbun, 2014), and cultural values (Kumar & Patriotta, 2011) of negotiators impact negotiation outcomes. In this school of thought, scholars have also paid attention to the framing of crises (McDermott, Cowden, & Koopman, 2002), the availability of decision support systems to negotiators (Wilkenfeld, Kraus, Holley, & Harris, 1995), justice and fairness (Albin & Druckman, 2014), and emotions (Renshon, Lee, & Tingley, 2017).

This rich literature has made important contributions to our understanding of cooperation in international diplomatic negotiations. Our goal here is to introduce a previously ignored factor—language style—and examine its relationship with agreement and disagreement in negotiations. Of course, multiple factors associate with successful cooperation in diplomacy. Yet, much of the literature to date has neglected the role that negotiators' linguistic styles might play in shaping diplomatic negotiation dynamics.

There is no doubt that what negotiators say can make or break a deal. However, we argue that negotiators' linguistic style, namely *how* they put their words together to articulate a message, is also an important factor. Consider, for example, the 2015 United Nations (U.N.) climate change negotiations in Paris. At the summit, the French President Francois Hollande, Pope Francis, and the then U.N. Secretary-General Ban Ki-Moon all expressed a sense of the urgency for addressing climate change. Hollande said "We are at breaking point"; Pope Francis said "We are at the limits of suicide"; and Ban Ki-Moon said "The time for brinksmanship is over."[2] Although the core message of these statements was essentially the same, *how* they expressed it differed. The first and second statements arguably appeal to one's emotions, while the third statement appeals to taking action. In addition, the subject of the first and second statement refers directly to the audience as the subject matter (i.e., "We"), whereas the subject of the third refers to a third party (i.e., "The time"). This example shows that even when individuals express similar ideas, they often articulate them differently. We contend that such differences in language style influence negotiation dynamics in international diplomacy.

[2]http://uk.reuters.com/article/climatechange-summit-highlights/highlights-world-leaders-open-paris-climate-change-talks-id UKL1N13P0FE20151130.

Language Style Matching

The focus of the current research is on a specific type of behavioral mimicry: the matching of individuals' language style. Language style refers to how an individual says something, specifically how she or he puts words together to communicate a message. Individuals can communicate the same message in different ways. Language style captures these differences. Matching of language styles refers to the alignment or matching of speaking partners' linguistic behavior and captures "the degree to which two people in a conversation subtly match each other's speaking style" (Ireland et al., 2011). In contrast, linguistic divergence takes place when speaking partners accentuate dissimilarities in verbal behavior.

A commonly used indicator of linguistic matching is language style matching (LSM; Ireland & Pennebaker, 2010; Niederhoffer & Pennebaker, 2002). LSM measures the degree to which two people within a conversation match each other's speaking style, particularly on their use of function words. As shown in Table 1, function words refer to words (e.g., pronouns, prepositions, conjunctions, and articles) that do not have a meaning of their own out of the context in which they are used (Chung & Pennebaker, 2007). Also called "junk words," function words provide a useful way to capture linguistic style matching that develops organically in a conversation because individuals have little control over their use of function words. The most important characteristic of function words is that they are uttered rapidly and without much thought (Ireland & Henderson, 2014; Pennebaker & King, 1999). As a result, individuals have a terrible memory of their own and others' use of function words and are unable to easily match their conversation partner's use of function words even when they try (Ireland & Pennebaker, 2010; Tausczik & Pennebaker, 2010). This means that people cannot easily manipulate their use of function words to strategically accommodate a conversation partner's style. Therefore, scholars use function word matching as an indicator of language style matching that develops subtly and naturally in a conversation.

Higher levels of language style matching may suggest that conversation partners have a matched focus on the following: the subject(s) of attention (through the use of personal and impersonal pronouns); the specificity and qualifications relating to their conversation topic (through the use of articles and adverbs); the temporal and spatial factors of their statements (through the use of auxiliary verbs and prepositions); refining stances on viewpoints (through the use of negations to clearly state one's position on an issue); or connecting thoughts and ideas and creating a coherent narrative (through the use of

Table 1
Categories of Function Words Analyzed to Measure Language Style Matching

Function word category	Description	Sample words
Personal pronouns	Words used to refer to another person	I, she, they, we
Impersonal pronouns	Words used to refer to people in general or unspecified objects	That, those, it
Articles	Words used to refine (determine) understanding of a subsequent noun	A, an, the
Auxiliary verbs	Verbs used to add functional or grammatical meaning to the main verb	Is, will, can, to be, to have
High-frequency adverbs	Words that indicate how often something happens	Too, very, quite, hardly, often
Conjunctions	Words that are used to connect clauses or sentences	And, while, because, but
Prepositions	Words used to relate a noun to some other constituent of the utterance	In, about, before, after, with
Quantifiers	Words used to indicate amount, quantity	Tons, some, few, many
Negations	Verbs expressed in the past-tense	No, not, never,

conjunctions; Tausczik & Pennebaker, 2010). Growing evidence supports the validity and reliability of function word matching as a measure of linguistic matching in conversations both between two individuals and in small groups (Babcock, Ta, & Ickes, 2014; Chung & Pennebaker, 2007; Ireland et al., 2011; Muir, Joinson, Cotterill, & Dewdney, 2016, 2017). In addition to linguistic style matching, LSM reflects "not only each partner's attempts to engage the other, but also the degree to which these attempts are reciprocated" (Ireland et al., 2011). This suggests that the LSM measure is a result of the interactions among interaction partners rather than the natural linguistic nature of the interaction partners.

Language Style Matching and Agreement in International Negotiations

A bourgeoning body of work has showed that language style matching maps onto positive negotiation outcomes. Paralleling the broader literature on negotiations, in this scholarship, negotiation is conceptualized as a process whereby differing perspectives on outcomes exist among the negotiating parties and, thus, there are obstacles to reaching an agreement or distribution of gains among the parties. Existing studies have showed that when language style matching is present, negotiators are more likely to reach an agreement or a successful bargain. For example, Niederhoffer and Pennebaker's (2002) analysis of the policy discussions between President Nixon and his aides, H. R. Haldeman, John Erlichman, and John Dean, during Watergate showed that matching of linguistic styles associated with better interaction quality and agreement. But, as conflicts intensified over the course of the Watergate affair, synchrony in language use declined, especially between Nixon and Dean. Similarly, Huffaker et al. (2011) showed that greater linguistic matching increased the likelihood of agreement and coalition formation in multiparty negotiations. In the context of hostage negotiations, Taylor and Thomas (2008) demonstrated that successful negotiations were associated with a higher degree of linguistic style matching between the police and hostage takers than unsuccessful negotiations. Richardson et al. (2014) demonstrated that alignment of linguistic styles between police interrogators and suspects was associated with higher confession rates. Ireland and Henderson (2014) also observed that language style matching in the initial phases of negotiations predicted more positive interactions. The importance of linguistic matching for reaching an agreement has also been demonstrated in intercultural negotiations (Kern, Lee, Aytug, & Brett, 2012), conflict resolution between romantic partners (Bowen, Winczewski, & Collins, 2017), team performance (Yilmaz, 2016), and interpersonal mediation (Donohue & Liang, 2011; Olekalns, Brett, & Donohue, 2010).

Following the logic of existing studies, we expect linguistic style matching among diplomats to map onto agreement in negotiations. As captured in Figure 1, the mechanism behind our argument rests on common knowledge, sometimes also referred as shared understanding or common ground. A number of studies in psychology and communication have showed that linguistic matching generates common knowledge or shared understanding among speaking partners (Giles et al., 1991; Ickes, 2002; Kecskes & Zhang, 2009; Morganti, 2008; Schegloff, Koshik, Jacoby, & Olsher, 2002; Wilkes-Gibbs & Clark, 1992). When speaking partners synchronize their linguistic styles, they develop common ground on the strategic negotiation situation, which, in turn, facilitates positive interaction outcomes and cooperation (Aronsson, Jonsson, & Linell, 1987; Dewulf, Gray, Putnam, & Bouwen, 2011; Giles & Ogay, 2007; Pickering & Garrod, 2004).

Figure 1. An illustration of the causal logic of the argument.

Linguistic accommodation contributes to common knowledge through several related pathways. First, it cultivates "matching cognitive frameworks in which conversants adopt shared assumptions, linguistic referents, and knowledge" (Ireland & Pennebaker, 2010). Second, it reduces the "social distance" between interaction partners (Giles et al., 1991) and facilitates "harmony" in the interpretation of the conflict at hand and solutions to it (Niederhoffer & Pennebaker, 2002; Taylor, 2002). The main idea here is that the language individuals use to convey their thoughts, opinions, preferences, and feelings is indicative of how "people perceive the world, and if people are matched in their linguistic styles, this would signify that they are in harmony in the ways they organize their psychological worlds" (Niederhoffer & Pennebaker, 2002).

International relations and diplomacy scholars agree that common knowledge is an essential component of cooperation in international diplomacy and negotiations (Hopf, 1998; Jervis, 1976; Katzenstein, Keohane, & Krasner, 1998; Wendt, 1999). Common knowledge exists when an actor knows X, other actors also know X, and all actors know that all players know X. . . ad infinitum (Geanakoplos, 1992). In its most basic form, common knowledge provides focal points around which actors' expectations converge so that actions can be coordinated to reach mutually beneficial outcomes (Chwe, 2001; Grynaviski, 2014; Morrow, 1994; Schelling, 1960).

In order to cooperate and reach an agreement, negotiators need to be able to anticipate what others will do in response to their own strategies. For this to happen, actors need to share an understanding and have common knowledge on a number of issues: They need to be on the same page regarding the nature of the strategic situation they face, including the costs and benefits of different outcomes to themselves and others, the relevant actors and power dynamics among them, the possible actions these actors might take given their interest structures, and the appropriate means of communication. Thus, sharing an understanding (i.e., having common knowledge) on these issues makes it possible for negotiators to imagine and anticipate others' behavior, which is the basis of cooperation. Lack of common knowledge, in contrast, impedes agreement. This claim is supported not only in international relations and diplomacy studies (Chwe, 2001; Grynaviski, 2014; Morrow, 1994; Rathbun, 2014; Schelling, 1960) but also in research by psychologists and communication scholars (Dewulf et al., 2011; Donohue, 1998; Hammer, 2001; Ireland & Henderson, 2014; Putnam, 2010).

Therefore, because it fosters common knowledge among negotiators, we predict that a higher level of linguistic style matching will be conducive to reaching an agreement whereas lower levels of linguistic style matching will hinder an agreement. Critics might object that matching of linguistic styles among negotiators might be a function of their preexisting preferences on the content of negotiations. However, this is unlikely to be the case because negotiation is defined to be a process of bargaining in which there are different preferences over the outcome. Additionally, defining language style by the use of function words (as we do in the current research) helps circumvent the problem that linguistic style might be endogenous to negotiators' preferences on content. Because function words have no substantive meaning whatsoever, and given that people cannot easily manipulate their use of function words to strategically accommodate a conversation partner's, it is unlikely that an underlying preference distribution among negotiators will manifest itself in their linguistic styles. Thus, we summarize our central claim in the following hypothesis:

> ***Hypothesis 1:*** Negotiations that end with agreement among parties will be characterized by a higher degree of linguistic style matching than negotiations that end with disagreement.

Present Research: Language Style Matching at the European Constitutional Convention

In the current study, we used hand-extracted data from verbatim records of the plenary sessions of the Constitutional Convention on the Future of the European Union (2002–2003), focusing on the debates related to the legal personality of the Union and to qualified majority voting that ended with agreement

and disagreement, respectively. The Constitutional Convention was established by the "Laeken Declaration on the Future of the Union" (December 15, 2001). In the Laeken Declaration, EU member states agreed that a "deeper and wider debate about the future development of the European Union" was crucial and had to take place before the upcoming Intergovernmental Conference.[3] Chaired by Valery Giscard d' Estaing, the Constitutional Convention (CC) held its first meeting on March 1, 2002. On the day of its last meeting (July 18, 2003), it presented the draft treaty proposing a European Constitution.

The political and legal importance of the CC for reforming the EU is well-established in the literature (Eriksen, Fossum, & Menéndez, 2004; Rittberger & Schimmelfennig, 2006). The CC has also attracted the attention of scholars because of its unique institutional characteristics, such as a presidency and transparency of proceedings (webcasts were provided to the public), that set it apart from conventional intergovernmental conferences and raised debates about whether the convention method is better suited than the intergovernmental method for cooperation and for increasing the legitimacy of the Union (De Burca, 2003; Risse & Kleine, 2007).

Besides its political and institutional significance, we choose the CC as a laboratory for our purposes for two analytical reasons. First is representation. The CC included government representatives, members of national parliaments, members of the European Parliament, and representatives from the European Commission. The inclusion of different types of diplomatic agents allows us to examine whether our hypothesis holds when negotiators represent different political interests and have different constituency concerns. Additionally, the participation of actors from national and European institutions helps us guard against the possibility that customary norms and discourses of a specific type of institution might create the impression of linguistic style alignment when there is none.

The second reason we chose the CC as our laboratory is the broad range of languages participants spoke. Existing works have largely studied linguistic style matching between English speakers. Since multilingual negotiations are an indispensable part of international diplomacy, we believe it is important to investigate the utility of linguistic style matching analysis and the LSM measure in a multilingual setting. At the CC, the majority of the delegates delivered their contributions in their mother language. These speeches were translated and interpreted simultaneously for all the participants. We manually translated the German and French texts into English. For all other texts (e.g., Greek, Dutch, Romanian, and Italian), we used machine translation. Thus, the CC enables us to probe our hypothesis with human- and machine-translated texts in a multilingual bargaining environment.

The negotiations that took place during the Constitutional Convention were not "back and forth" in which individuals had multiple speaking turns within a topic. Rather, each individual only had one speaking turn in the form of a speech that is heard by all participating negotiators. This kind of dynamic is typical of many multilateral negotiations in international politics. This does not mean that there was no room for negotiators to adjust their speech to match others' language style. In multilateral negotiation settings, such as the Constitutional Convention, negotiators often interact with each other before they make their contributions during the plenary sessions. They also converse during the course of the negotiations, which typically last a few days, in both formal and informal ways. Demonstrating the value of LSM in world diplomacy thus requires applying it to negotiations that take place in such a group setting. We return to this point in the conclusion.

We focus on two major issues negotiated at the CC: legal personality of the Union and qualified majority voting (QMV). Both matters were tremendously important for the reform and future prospects of the Union, yet the delegates at the CC only managed to reach an agreement on the former.

Before the plenary debate began at the Convention, the Presidium had charged the working group on legal personality with providing guidelines. Chaired by Giuliano Amato, the working group began its first meeting on June 18, 2002, and submitted its report on October 1, 2002. The report of the working group

[3]http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52000XR0430.

concluded that the Union must have an explicit single legal personality. During the plenary debate on October 3, 2002, delegates from national parliaments, European institutions, and governments discussed the report of the working group at length. Some delegates were concerned that a single legal personality would damage the pillared structure of the Union and infringe upon sovereignty. Others saw the absence of legal personality detrimental to the competence of the Union and a major source of ambiguity and inconsistency in treaty making (De Burca, 2003). In the end, however, a consensus was formed, and delegates agreed on including an article (Article 6) in the draft treaty submitted to the European Council that states stated that "The Union shall have legal personality" (De Schoutheete & Andoura, 2007; Risse & Kleine, 2007).

In contrast, negotiators failed to reach an agreement on QMV. They disagreed on the definition of QMV and on the relative decision-making power of larger and smaller EU member states. The Convention President, Giscard d' Estaing, pushed the principle of double majority defined as the majority of member states, representing at least two-thirds of the population of the Union. This proposal immediately received criticism, and the opposition to double majority persisted throughout the plenary sessions. The opposition to the double majority was concerned that changing the previously reached Nice compromise on QMV would open a Pandora's box of problems that can jeopardize the work of the CC and threaten agreement on other issues at the CC. Yet, others supported the double majority proposal as a welcome improvement over the Nice formula that they saw as too complex and nonegalitarian (Hatakoy, 2012). At the last debate of QMV, the Convention President admitted that there was no agreement on the definition of QMV.

We do not claim that linguistic style matching is the only determinant of negotiation success. We do, however, contend that successful negotiations will be characterized by greater linguistic style matching because it allows negotiators to reach a shared understanding of the issues at hand. Therefore, if our argument is correct, we should observe lower linguistic style matching among delegates in discussions on QMV which ended with disagreement, and higher linguistic style matching among delegates in discussions on legal personality which ended with agreement.

Method

To test our hypothesis, we analyzed the available 38 speeches on legal personality and 23 on QMV.[4] First, we saved the speeches of each actor in the legal personality and QMV negotiations in separate electronic documents. We then ran these documents through the LIWC program, which determines the percentage of words within a given corpora of text that represents different linguistic categories (e.g., parts of speech, personal pronouns, social concerns, and emotions) and produces this as its output (Tausczik & Pennebaker, 2010). For example, if LIWC analyzed a corpus of text that included 500 words, it might find that the target text contained 200 articles, 50 personal pronouns, and 10 conjunctions. The LIWC program output would then indicate that the target text included 40% articles, 10% personal pronouns words, and 2% conjunctions. These percentages are then used to calculate the LSM scores on specific function word and content word categories between speakers. Even though international relations and diplomacy scholars have yet to take advantage of LIWC, recent interdisciplinary studies have shown that LIWC dictionaries are valid to capture crucial constructs central to international negotiation, such as trust, intention to compromise, and emphasis on past wrongs, to name a few (Donohue, Liang, & Druckman, 2014).

We calculated and examined LSM on individual function word categories, as well as individual content word categories, instead of an aggregate LSM measure due to the nature of the negotiations (i.e., each negotiator only had one speaking turn in the form of a speech that is heard by all

[4]Space limitations preclude the list with all the speakers' names. This list is available from the authors upon request. We included all the speeches made by the participants on the relevant issues.

individuals within a given discussion). This provided a more informative assessment of linguistic style matching than simply examining an aggregate LSM measure, as it allowed us to examine *how* negotiators matched linguistic styles. For example, if group A exhibited higher LSM on conjunctions (a function word category) than group B, this might indicate that group A was better able to match on connecting thoughts and ideas and was better able to create a coherent narrative with one another than group B.

To calculate function word matching, we obtained the percentage of each function word category in each actor's portion of the negotiation through LIWC. Next, we used these percentages to calculate the LSM score for each function word category between every possible pair of actors using the following formula where function_1 is the percentage of total words from one interaction partner's portion of the conversation that represented a specific function word category, and function_2 is the percentage of total words from the other interaction partner's portion of the conversation that represented the same function word category:

$$\text{LSM}_{\text{function}} = 1 - ((|\text{function}_1 - \text{function}_2|)/(\text{function}_1 + \text{function}_2 + 0.0001))$$

These scores were then averaged together to obtain an overarching measure of function word matching for *each* function word category in legal personality and QMV discussions.

To illustrate, consider the following example in which we calculate the LSM score for the function word dimension quantifiers (i.e., $\text{LSM}_{\text{quantifiers}}$) between three negotiators on QMV:

Ruppel (Slovenia): *I am therefore in favour of preserving the rotating Presidency system, at least at the levels of the European Council, General Affairs Council and Coreper, thereby guaranteeing a suitable representation and equality of all Member States and allowing the citizens of each Member State to identify with the EU. Perhaps we need to adjust the present system of management; it should be a system appropriate for multinational organisations. Simple majoritarian democracy would be a recipe for radical democratic deficit.*

Wittbrodt (Poland): *I am in favour of election of the President of the European Commission by the Parliament. I am in favour of a reformed Presidency, which should reflect the rules of efficiency and continuity. Therefore we should make it longer, extended to two-and-a-half years for example. It could held by three or four countries combined, on the basis of their size.*

Santer (Luxembourg): *We want the European Council to play its full political role, which is fundamental in a Union of 25 or more members. And a good preparation of its work is therefore essential. However, we do not wish to make the European Council a separate institution. We propose that the chairmanship of the General Affairs Council be entrusted to the President of the Commission. Thus, the need for continuity of coherence in the Union's action will be best ensured.*

The LIWC output indicated that the text corresponding to Ruppel included 5.06% quantifiers; the text corresponding to Wittbrodt included 0% quantifiers; and the text corresponding to Santer included 1.28% quantifiers. Using the formula above, we obtain the following results:

$\text{LSM}_{\text{quantifiers}}$ between Ruppel and Wittbrodt: 0.00002
$\text{LSM}_{\text{quantifiers}}$ between Ruppel and Santer: 0.4037
$\text{LSM}_{\text{quantifiers}}$ between Wittbrodt and Santer: 0.0001

As the results indicate, linguistic style matching on this dimension (i.e., quantifiers) was much higher between Ruppel and Santer than it was between the other pairs.

Results

As captured in Table 2, which shows the comparative results, the findings support our hypothesis. Legal personality discussions numerically exhibited higher LSM than QMV discussions in all function word categories. Using a series of *t* tests with a Bonferroni correction, we found that function word matching was significantly higher for legal personality discussions than in QMV discussions in five out of the nine function word categories: personal pronouns, impersonal pronouns, common adverbs, negations, and quantifiers. This suggests that legal personality negotiators were more focused on providing information about the subject(s) of attention (via higher LSM on personal and impersonal pronouns), providing more information to qualify their statements (i.e., about the manner, place, time, frequency, certainty, or other circumstances of their statements via higher LSM on adverbs), providing more information regarding the quantity of something (via higher LSM on quantifiers), and refuting an opposing viewpoint, thus more clearly stating one's position on an issue (via higher LSM on negations).

As it is possible for conversation partners to deliberately match each other's speech on content words, previous studies have also explored how speakers synchronize the substance of their dialogue using a number of emotional and cognitive dimensions that reliably measure content matching, as shown in Table 3 (Taylor & Thomas, 2008). While language style matching on function words measures the degree of linguistic style matching that develops subtly in a conversation, language style matching on content words, such as nouns, verbs, and adjectives, captures the degree of linguistic style alignment on presentation of ideas, experiences, and emotions. Using the following formula (which is identical to the previous formula used for function words), we also explore content word matching as a robustness check on our finding of function word matching. Content_1 is the percentage of total words from one interaction partner's portion of the conversation that represented a specific content word category, and content_2 is the percentage of total words from the other interaction partner's portion of the conversation that represented the same content word category.

$$\text{LSM}_{\text{content}} = 1 - ((|\text{content}_1 - \text{content}_2|)/(\text{content}_1 + \text{content}_2 + 0.0001))$$

We used the same data analysis plan to examine content word matching as we did previously to examine function word matching. The results supported our hypothesis (Table 4). Using a series of *t* tests with a Bonferroni correction, we observed that content word matching was significantly higher for legal personality discussions than QMV discussions in 9 out of the 12 content word categories: word count, positive emotions, social, insight, causation, tentative, certainty, past-tense verbs,

Table 2
Language Style Matching for Function Word Categories

Function word category	QMV	LP
Personal pronouns	0.70 (0.10)	0.76 (0.08)*
Impersonal pronouns	0.70 (0.18)	0.82 (0.07)**
Articles	0.88 (0.08)	0.90 (0.03)
Common adverbs	0.69 (0.19)	0.78 (0.10)*
Auxiliary verbs	0.84 (0.06)	0.86 (0.06)
Conjunctions	0.83 (0.08)	0.84 (0.05)
Prepositions	0.91 (0.04)	0.92 (0.02)
Negations	0.46 (0.18)	0.61 (0.20)*
Quantifiers	0.63 (0.17)	0.81 (0.09)**

Note. *$p < .05$. **$p < .006$. Numbers in parentheses are standard deviations.

Table 3
Categories of Content Words Commonly Analyzed to Measure Linguistic Style Matching

Content word category	Description	Sample words
Positive emotion	Words of a positive valence and those indicating happiness and assurance	Happy, pretty, good
Negative emotion	Words of a negative valence and those indicating anxiety, anger, and sadness	Hate, worthless, enemy
Causation	Attempts to explain causes and effects	Because, effect, hence
Insight	Words expressing the ability to think, learn, and understand	Think, know, consider
Discrepancy	Words giving an explicit indication of the tense, mood, or voice of another verb	Should, could, would
Tentative	Words expressing uncertainty	Maybe, perhaps, guess
Certainty	Words expressing certainty	Always, never
Differ	Words used to distinguish what is included in a category and what is not	But, except, without
Past-tense verbs	Words that refer to actions or events in the past	Talked, went, received
Present-tense verbs	Words that refer to actions or events in the present	Talk, go, receive

and present-tense verbs. This suggests that legal personality negotiators exhibited better communication and engagement (via higher LSM on word count), reacted and coped more positively (via higher LSM on positive emotion words), were more focused on social processes and social interactions (via higher LSM on social process words), were actively processing information, connecting thoughts, and making sense of their environment (via higher LSM on words that indicate cognitive processes, such as insight, causation, tentative, and certainty), and took into account events that happened in the past and present in their discussions (via higher LSM on past and present-tense words).

Overall, both function and content word matching analyses show that there was higher linguistic style matching in legal personality discussions than QMV discussions, as we predicted. This finding shows that successful negotiations are characterized by a greater degree of linguistic styles matching among negotiators relative to unsuccessful negotiations.

Table 4
Language Style Matching for Content Word Categories

Content word categories	QMV	LP
Word count	0.59 (0.13)	0.72 (0.11)*
Positive emotions	0.65 (0.13)	0.74 (0.10)**
Negative emotions	0.55 (0.20)	0.59 (0.23)
Social	0.82 (0.09)	0.87 (0.06)*
Insight	0.78 (0.10)	0.83 (0.07)*
Causation	0.59 (0.21)	0.80 (0.07)**
Discrepancy	0.79 (.010)	0.64 (0.16)
Tentative	0.56 (0.25)	0.73 (0.16)*
Certainty	0.52 (0.18)	0.74 (0.09)**
Differentiation	0.68 (0.19)	0.66 (0.13)
Past-tense verbs	0.37 (0.14)	0.59 (0.15)**
Present-tense verbs	0.73 (0.27)	0.85 (0.05)*

Note. *$p < .05$. **$p < .006$. Numbers in parentheses are standard deviations.

Discussion

Negotiation researchers in psychology have observed that negotiators' language use influences the outcome of negotiations with successful negotiations being characterized by higher levels of linguistic style matching. Yet to date, these findings have not been applied to international diplomatic negotiations. Paralleling the results of existing negotiation studies, we found that linguistic style matching in international diplomacy is also associated with agreement among negotiators. Diplomats who met at the Constitutional Convention to negotiate the future of the EU represented diverse political and constituency interests. There were 15 delegates from the governments of member states, 13 from candidate countries, 30 (2 per member state) from national parliaments, 16 from the European Parliament, and two from the European Commission. The negotiations were long and intense, spanning from February 2002 to June 2003. The delegates did not see eye to eye on some issues. Despite this complexity, the style by which delegates expressed their positions made a difference in the outcomes. Successful negotiations on legal personality exhibited higher aggregate levels of matched linguistic style, whereas unsuccessful negotiations on QMV exhibited lower aggregate levels of matched linguistic style.

This result is replicated in our analysis of content word matching. Legal personality negotiations, which ended in agreement, were characterized by higher levels of linguistic matching on expressions of positive emotions; social relationships; words expressing ability to think, learn, and understand; expressions of uncertainty and certainty; as well as on word count and past and present-tense verbs. The occurrence of higher levels of language style matching for both function *and* content words in legal personality negotiations provides evidence that language style matching is not merely capturing convergence in content. If this were the case, we would only see higher language style matching for content words but not for function words. Rather, we also see higher language style matching for function words in legal personality negotiations—"junk words" that are uttered rapidly and without much thought, but actually provide important information regarding the social and psychological states of individuals.

Strengths, Limitations, and Future Research

We are cognizant that negotiation outcomes in international diplomacy are determined by a myriad of political, economic, and cultural and psychological considerations. Our research shows that the linguistic styles by which negotiators communicate with each other are also an important factor and that matched linguistic styles map onto agreement in negotiations. Whether linguistic style is the most crucial factor in a given set of negotiations is ultimately an empirical question. However, we reason that linguistic style matching will exert a large degree of impact on international negotiation outcomes when negotiators have competing understandings of the issues at stake because matched linguistic styles help interaction partners, including negotiators, to establish common ground and facilitate mutual understanding.

Even though we found statistically significant results for the effect of linguistic style matching on negotiation outcomes, we did not investigate the importance of matched language style relative to other influences that may have impacted the success of negotiations. Future work could seek to tease out the relative impact of different factors on negotiation outcomes by conducting foreign policy simulation experiments. For example, researchers may wish to manipulate whether an international organization is involved in negotiations and then analyze how negotiators' linguistic styles might influence negotiation success in different experimental conditions. Similarly, experimental work can manipulate power dynamics among negotiations, the type of negotiation issue at hand (e.g., territorial and economic), the intensity of the conflict being negotiated, or the gender or experience of negotiators to name a few examples.

An important strength of our research is that our data come from actual diplomats negotiating real political issues in a real political setting. However, because our data are observational, we cannot unequivocally establish causality, nor can we rule out the possibility of reverse causation (i.e., agreement

leading to higher linguistic style matching rather than higher linguistic style matching leading to agreement). It is also prohibitively difficult to use real-world diplomats and politicians as experimental participants (c.f. Bayram, 2017; Hafner-Burton, LeVeck, Victor, & Fowler, 2014). Therefore, we encourage scholars to marry observational analysis with experiments to better address the issue of causality. For example, future experiments could complement our research by tasking two different convenience samples of participants to negotiate the same issue (e.g., QMV) and investigate the extent to which differences in negotiation outcomes across the two samples are attributable to variation in aggregate LSM scores.

Another limitation of this research is that the negotiations we examined were not dyadic but rather multilateral in which negotiators each had one speaking turn. This is typical of international diplomatic negotiations that take place under the auspices of international organizations, such as the United Nations or the European Union, and when multiple countries are involved. However, we recognize that our analysis offered a snapshot of the relationship between LSM and negotiation outcomes. We believe that this was a necessary first step to investigate the utility of LSM in international multilateral diplomatic negotiations. We encourage researchers to study diplomatic texts with multiple speaking turns that might offer more insights into the ebb and flow of language style matching. In particular, we believe that there will be great value in hypothesizing convergence of linguistic styles among diplomatic agents over time. For example, scholars can explore how LSM scores change as negotiators spend more time interacting, as agreements or disagreements over specific given issues deepen, or as negotiators switch from one issue to another. Future studies should further examine the utility of LSM in other multilateral negotiations as well as investigate how the application of LSM might be refined and adapted to diplomatic talks and conflicts in group settings as well as within international organizations (Mikkelsen & Clegg, 2018).

Last, future research might also examine the relationship between linguistic style and negotiation strategies. Some negotiators adopt an integrative negotiation strategy called value creating, whereas others focus on a competitive distributive negotiation strategy called value claiming (Lax & Sebenius, 1986). The strategies that negotiators choose are partly determined by individual-level factors, such as personality traits, ideology, and partly by the nature of the bargaining game such as whether the negotiation is about an intractable territorial conflict or about reaching mutually beneficial solutions. We encourage researchers to investigate the interaction between linguistic type and negotiation tactics in fixed and nonfixed pie negotiations.

Conclusion

The purpose of the present research was to examine the association between linguistic style matching and agreement in international diplomatic negotiations. We hypothesized and provided evidence that negotiations on legal personality at the European Constitutional Convention (which ended in agreement) were associated with higher aggregate levels of matched linguistic style whereas negotiations on QMV (which ended in disagreement) were characterized by lower aggregate levels of matched linguistic style as measured by both function and content word matching.

Despite the richness of the literature on international and European negotiations, very little attention has been paid to the association between linguistic style and negotiation outcomes by international relations and diplomacy scholars. This neglect is, in fact, quite ironic given the growing use of psychological insights by international relations and diplomacy scholars (Bayram, 2017; Hafner-Burton et al., 2014; Rathbun, Kertzer, & Paradis, 2017). In this research, we sought to build a bridge between these fields and psychology by providing an application of LSM to international negotiations regarding the future of the EU. We also sought to advance LSM analysis by providing a test of its utility in international diplomacy research.

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