Appendix A
Additional Theoretical Considerations

Part A1: Plausibility Probe – Signaling in Chinese Border Negotiations

In the main text, we present results from a statistical analysis of our theoretical argument. These results admittedly do not speak directly to the signaling mechanism we propose. In an effort to address this deficiency, we include a brief examination of Chinese behavior in the 1960s. The discussion that follows is not meant to be an empirical *test* of our argument, but rather an illustration of the *plausibility* of the theoretical mechanism that we propose is at work. As this discussion demonstrates, leaders often use border agreements to signal the existence of a bargaining space and illustrate acceptable terms to other neighbors with which they have outstanding border disputes.

China's vast territorial space ultimately yielded myriad international borders, especially as decolonization escalated after World War II.[1] Although China negotiated with colonial powers (e.g., Britain) over the status of some of these borders, many of these negotiations never produced mutually agreed upon border delimitations (e.g., with India or Burma). China also used decolonization to raise territorial claims as new states entered the system along its periphery (e.g., Pakistan).[2] This left China with a handful of unsettled borders as the new Communist government gained control of the state in 1949. After a process of intermittent negotiation, China finally settled its border with Burma in 1960. Three additional border agreements then followed quickly thereafter – in 1962 (Mongolia) and 1963 (Afghanistan and Pakistan).[3] The crucial question for us is therefore: was the China-Burmese agreement intended as not merely an agreement unto itself, but also as a signal to other neighboring states that encouraged further border settlement? The evidence suggests that it was.[4]

Statements made by Zhou Enlai, China's Premier, reveal that China tried to use the Burmese agreement to signal two pieces of information to other neighboring states.[5] First, China wanted to convey to other neighbors that agreement was possible, even on contentious territorial issues. For example, Zhou noted that the Burmese agreement would "establish a model for Asian countries" (quoted in Fravel 2008:88). This "model" was peaceful negotiation over border territory. A few weeks later, an editorial in the *People's Daily* framed the signal in even clearer terms: "Why cannot events that have happened between China and Burma also occur between China and other Asian countries" (quoted in Fravel 2008:88)?

Of course, similar events *did* happen with three of China's other neighbors, each of which sent additional, similar signals. First, in 1962, China settled its border with Mongolia. After this agreement, Zhou underscored the signaling properties of this *new* agreement by noting that "A reasonable settlement of the border questions between China and Mongolia will be an example and encouragement for border negotiations with other countries" (quoted in Fravel 2008:112). He also stated that the agreement would "contribute to the *resolution* of border questions with our [China's] other neighboring countries" (emphasis added; quoted in Fravel 2008:112). This suggests that he thought the agreement contained valuable information for other neighboring states – about process, content, or perhaps both.

---

[1] Although our plausibility probe examines Chinese behavior and statements, the results are *not* driven by major states dictating terms to minor powers. When we control for major state membership in dyadic border disputes, we *still* find evidence that border agreements diffuse geographically. See appendix B1 below for these results.

[2] On these examples, see Huth and Allee (2002: Appendix E).

[3] China also reached an agreement with Nepal. Because the border data we use considers this border settled in 1856, we do not include Nepal in our discussion. Doing so, however, would strengthen the conclusions we reach.

[4] China also needed to be *willing* to settle its borders with its various neighbors (see Fravel 2008 for a theoretical explanation for such a willingness). This, however, is consistent with our argument. It is also worth noting that states might still send, misinterpret, or ignore signals, regardless of state motivations.

[5] In the paragraphs that follow, we rely on Fravel (2008: chapter 2) for English translations of original Chinese sources that are relevant to our argument. Note that we also control (in robustness tests) for Fravel's argument that additional internal and external threats yield border settlement (see Table 1 in the manuscript). Our diffusion results therefore do not stem from the emergence of new threats.

Second, China successfully settled its border with Afghanistan during the year following the Mongolian agreement – in 1963. Fravel (2008:119) believes that "on its own, China's dispute with Afghanistan was unimportant…. Overall, [however], the treaty served as *another* signal to the Soviet Union and India of China's willingness to compromise in its outstanding territorial disputes" (emphasis added). If the Soviet Union and India were receiving these broad, public signals that negotiation over the border was possible, other neighbors were too. Furthermore, the statement suggests that previous agreements sent similar signals.

Finally, China settled its border with Pakistan toward the end of 1963 as well. A joint statement issued by the two states after the agreement's signing noted that "conducting peaceful consultations … was an effective way of solving international disputes" (quoted in Fravel 2008:117-8). By pairing the statement with a border agreement, the Chinese also specifically signaled that *border disagreements* could be resolved via negotiation. Thus, the main message to China's neighbors was that China could negotiate over and concede territory – in other words, China advertised that a bargaining space existed on contentious territorial issues, much as our argument claims. The message began with the Burmese agreement, but each successive agreement reinforced that message.

The second signal China sent via the (initial) Burmese agreement involved the *specific terms* that China might find acceptable in a border agreement. In particular, Lamb (1964) proposes that China wanted to accept previous proposals (e.g., the McMahon Line proposed by Britain) meant to define the outer limits of Chinese sovereignty, but struggled because they viewed these previous proposals (and the related negotiations) as imperialistic. China wanted to accept the *content* of these proposals, but not the symbolism behind them. The Chinese therefore "rejected" the imperial proposals and "started from scratch," although they often returned to the same terms contained in the initial (imperial) proposals during the "new" negotiations. This formula successfully settled the Burmese border in 1960. China hoped that this success, as Fravel (2008:89) notes, "clearly signaled to India that China would be willing to accept the direction of the McMahon Line [i.e., British proposal] in that dispute as well."

The content signal, however, need not be confined to India. It appears in negotiations with other neighbors in two ways. First, the acceptability of imperial borders was a common question in Chinese border negotiations. For example, the British had made proposals to China over the Afghanistan-China border during a negotiation with Russia (Biger 1995). Thus, accepting "imperial proposals" sent signals to other neighbors as well. Second, Chinese border agreements contain some similar provisions, suggesting that terms may carry over from one agreement to the next. For example, a review of the border agreements between China and Burma, Mongolia, Afghanistan, and Pakistan, reveal three common characteristics: the use of similar reference points to decide borders (e.g., the "midpoint" of rivers or the "water-parting" line of mountain passes); the creation of Joint Boundary Commissions to immediately survey the agreed upon boundary; and the belief that any future dispute over the border would be resolved through "friendly consultations" (Cukwurah 1967; United States Department of State 1964, 1968, 1969, 1984).[6] In each case, successive negotiators could look at previous, successful Chinese border agreements to see what China accepted in earlier disputes. That these terms appear repeatedly underscores their acceptability to China (though they must also be acceptable to China's neighbors). Furthermore, each successive use of similar content strengthens the signal being sent about content to neighboring states.

Finally, it is worth noting that the agreements with Mongolia, Afghanistan, and Pakistan also sent content signals to other neighbors that still lacked defined borders with China.[7] After settling the border with Mongolia (1962), for example, Zhou stated his hope that other neighboring borders could be resolved "on the bases of the same [Chinese-Mongolian] principles" (quoted in Fravel 2008:112). These principles involve both the process and content described above. Similarly, China ultimately settled its borders with Afghanistan and Pakistan in 1963 by accepting earlier British (imperial) proposals.[8] This is consistent with China's behavior toward Burma. It also reinforces the Burmese signal that "imperial"

[6] Lamb (1964) reaches the same conclusion on the similarity of content in these Chinese border treaties.
[7] A common criticism in 1963 appears to have been that Chinese border agreements in the 1960s were meant to "embarrass" India. Lamb (1964) refutes this argument.
[8] Only part of the Sino-Pakistani border followed the British 1899 proposal (Lamb 1964:300-301).

proposals might be acceptable in other disputes too. This signal clearly applied to the Soviet Union and India (Fravel 2008), though other neighbors might have found it relevant as well.

Importantly, signaling through border agreements occurs whether the sender consciously attempts to signal (as in the case of China) or the intended recipient accurately interprets it. Lamb (1964), for example, argues that a Chinese-Indian border agreement might have been reached in the mid-1960s *if* the Indian government had accurately interpreted what the Chinese were conveying through other agreements (i.e., the acceptability of borders considered "imperially" based). In other words, India missed, misinterpreted, or ignored the Chinese signal. In contrast, Pakistan initiated negotiations with China over their mutual border because Burmese officials persuaded Pakistan's United Nations delegation that China behaved "reasonably" and "magnanimously" in the Burmese-China negotiations (Maxwell 2006:3875). Although diplomatic contacts reinforced the signal(s) sent by the Burma-China agreement, Pakistani officials clearly acted *because of* the earlier border settlement. Given the challenges of signaling, we concur with Cukwurah (1967:150-151) that neighboring states must always be vigilant for opportune moments in which to push for border settlement. The aftermath of a related agreement may offer such an opportunity.

Based on the preceding discussion of China, we therefore reach two conclusions. First, border agreements can signal the existence of a bargaining range to other neighboring states with which the signatories have unsettled borders. Second, border agreements can signal the type of provisions that the initial signatories will find acceptable. Both are important in the diffusion of border agreements. Neighbors regularly inform one another that *no* concessions (and therefore, provisions) are acceptable because border territory is highly salient. A border agreement, however, changes that position. It indicates that concessions are possible, but beyond this, it also suggests *which exact* concessions might be acceptable. This helps neighbors find the provisions that will maximize their chances of concluding a successful agreement with a state that signed an initial agreement.

References

Biger, Gideon. (1995) *The Encyclopedia of International Boundaries*. New York: Facts on File.

Cukwurah, A.O. (1967) *The Settlement of Boundary Disputes in International Law.* Manchester: University of Manchester Press.

Fravel, M. Taylor. (2008) *Strong Border, Secure Nation.* Princeton: Princeton University Press.

Huth, Paul K., and Todd L. Allee. (2002) *The Democratic Peace and Territorial Conflict in the Twentieth Century*. Cambridge: Cambridge University Press.

Lamb, Alastair. (1964) The Sino-Pakistani Boundary Agreement of 2 March 1963. *Australian Outlook* 18(3):299-312.

Maxwell, Neville. (2006) Settlements and Disputes: China's Approach to Territorial Issues. *Economic and Political Weekly* 41(36):3873-3881.

United States Department of State (1964) *International Boundary Study No. 42: Burma-China Boundary.* Washington, DC: Department of State.

United States Department of State (1968) *International Boundary Study No. 85: China-Pakistan Boundary.* Washington, DC: Department of State.

United States Department of State (1969) *International Boundary Study No. 89: Afghanistan-China Boundary.* Washington, DC: Department of State.

United States Department of State (1984) *International Boundary Study No. 173: China-Mongolia Boundary.* Washington, DC: Department of State.

Part A2: Theoretical Development of Alternative Explanations to Diffusion

We recognize that diffusion is not the *only* mechanism by which states might overcome their negotiation obstacles and conclude border agreements. Alternative mechanisms exist, and we might classify them into two broad camps: repeated (cooperative) interaction and third-party assistance. Repeated (cooperative) interaction can create a reputation for cooperation that increases the likelihood that information can be credibly conveyed between neighbors with unsettled borders (Blum 2007). In other words, interaction produces a reputation, which – if cooperative enough – can allow actors to communicate information credibly to one other. The impetus for this cooperative interaction derives from neighbors' fixed geographic realities and practical needs.

States cannot choose or alter their geographic position. Furthermore, neighboring states always are somewhat interdependent, as commerce, people, resources, and concerns often cross borders whether states want them to or not. This creates the need for some minimal level of cooperation (Axelrod 1984; Bo 2005).[9] To achieve it, neighboring states must necessarily negotiate with one another. These negotiations generally seek to outline a sphere in which cooperation will occur, develop expectations for behavior within that sphere, and (often) stipulate informal mechanisms for monitoring that behavior (Blum 2007; Keohane 1984). As an illustration, many Latin American countries negotiate "treaties of friendship and navigation" in the face of unsettled borders (Ireland 1938). These treaties (among other things) often include provisions that allow both parties to access disputed waterways for trade purposes, request troop withdrawals, preclude the use of force in future disputes, or establish temporary boundaries (i.e., *modus vivendi*) until final borders can be determined and delimited.

At first glance, these types of negotiations might seem to produce trivial outcomes. Yet they serve an important purpose: to develop a reputation for (un)cooperative behavior between neighbors with unsettled borders (see Kupchan 2010). After negotiated agreements (of *any* kind), states monitor one another's behavior. Failure to adhere to an agreement impedes further cooperation (e.g., see Colombia-Peru), while adherence enhances it (e.g., see Ireland-United Kingdom). This occurs because adherence is costly. States worry that behaving *as if* they implicitly accept what they see as temporary "border terms" – or *appearing* to do so by either allowing the opposing side to access disputed territory or stopping the military contestation of the border's placement – will create an unwanted, *de facto*, permanent border. Thus, adherence carries costs. States naturally try to mitigate these costs by explicitly stipulating that they have *not* handled a border's permanent delimitation, even in agreements signed as the result of negotiations that did not explicitly handle border delimitation issues (e.g., see Colombia-Peru agreement of 19 July 1911; Ireland 1938:195). Yet the fact that they take such actions underscores how costly they believe adherence can be.

Because adherence is costly, it can signal important information about a state's intentions and, therefore, its reputation for cooperation. In particular, it conveys that domestic obstacles do not preclude cooperative efforts, a bargaining range may exist (i.e., cooperation of *some kind* no longer seems impossible), and that actors may abide by an agreement reached. This helps combat the informational and commitment problem obstacles, but it is not a panacea. Actors do not know whether cooperation will carry over into a more salient issue (e.g., border *delimitation*), and they still worry about the credibility of their counterpart's information and commitment. Nonetheless, a reputation for cooperation can mitigate *some* of this worry, thereby increasing the likelihood of successfully negotiating a border settlement.

On the other hand, states might use third-parties to surmount their negotiation obstacles. More specifically, third-parties can perform one of two essential tasks (see Bercovitch and Jackson 2009 for an overview of this research). First, they can serve as a conduit of credible information – that is, third-parties might (help) states find the bargaining range or delimitation terms (e.g., see Kydd 2003; Princen 1992). This can occur as the result of arbitration (requested by the disputing states; e.g., see Colombia-Venezuela), colonial history (e.g., the United Kingdom's delimitation of the Iran-Afghanistan border), or a post-war conference (e.g., the creation of Czechoslovakia after World War I). In each case, a third-party determines a border's delimitation. States occasionally try to subsequently change those terms, but they

[9] As Blum (2007) shows: a) even rivals engage in this cooperation (e.g., India-Pakistan); b) cooperation can start in many functional issue areas, and c) once started, cooperation likely expands. See also Axelrod (1984).

often find this to be challenging – for the focal point created by the third-party provides more objective (i.e., credible) settlement terms than any alteration they might make (Schelling 1960). States therefore frequently return to the third-party's terms even after trying to escape them (e.g., Colombia-Venezuela).

Second, third-parties can circumvent the credible commitment problem by underwriting delimitation agreements. That is, if a state fears that its counterpart will later renege on a signed agreement (i.e., the commitment problem), one solution involves finding a third-party to *enforce* that agreement and prevent reneging (Walter 1997). For example, Argentina, Brazil, Chile, and the United States guaranteed the 1942 Rio Protocol between Ecuador and Peru. When Ecuador subsequently tried to renege, the guarantor nations repeatedly enforced the original agreement (see also Ethiopia-Somalia). This is not to say that third-parties can or will enforce an agreement at all costs; indeed, Ecuador and Peru eventually fought a war over their border delimitation (in 1995). Instead, we simply mean to suggest that having a third-party that can mitigate commitment problem concerns will increase the likelihood that states can reach a border delimitation agreement.

References

Axelrod, Robert. (1984) *The Evolution of Cooperation*. New York: Basic Books.

Bercovitch, Jacob, and Richard Jackson (2009) *Conflict Resolution in the Twenty-first Century.* Ann Arbor, MI: University of Michigan Press.

Blum, Gabriella. (2007) *Islands of Agreement*. Cambridge: Harvard University Press.

Bo, Pedro D. (2005) Cooperation under the Shadow of the Future: Experimental Evidence from Infinitely Repeated Games. *American Economic Review* 95(5):1591-1604.

Ireland, Gordon. (1938) *Boundaries, Possessions, and Conflicts in South America*. Cambridge: Harvard University Press.

Keohane, Robert O. (1984) *After Hegemony*. Princeton: Princeton University Press.

Kupchan, Charles A. (2010) *How Enemies Become Friends*. Princeton: Princeton University Press.

Kydd, Andrew. (2003) Which Side Are You On? Bias, Credibility, and Mediation. *American Journal of Political Science* 47(4):597-611.

Princen, Thomas. (1992) *Intermediaries in International Conflict*. Princeton: Princeton University Press.

Schelling, Thomas C. (1960) *The Strategy of Conflict.* Cambridge: Harvard University Press.

Walter, Barbara F. (1997) The Critical Barrier to Civil War Settlement. *International Organization* 51(3):335-364.

Appendix B
Additional Empirical Analyses

Part B0: Variable names, descriptions, and sources

Table B1. Variables.

Variable Name	*Description*	*Source*
Variables used in main manuscript (and robustness checks that follow):		
Border settlement	Dichotomous: whether a dyad settled its borders prior to the observation year. Settlement occurs when dyad members sign an interstate agreement prior to the observation year in which they delimit the entirety of their mutual border(s).	Owsiak (2012)
Proportion of relevant borders settled	Ratio: proportion of a dyad's borders that are settled before the observation year.	Owsiak (2012)
Years since relevant settlement	Count: number of years since either dyad member signed a border agreement with any of its other land contiguous neighbors.	Created, from Owsiak (2012)
Years since relevant settlement^2	Count: square of number of years since either dyad member signed a border agreement with any of its other land contiguous neighbors.	Created, from Owsiak (2012)
Years since relevant settlement^3	Count: cube of number of years since either dyad member signed a border agreement with any of its other land contiguous neighbors.	Created, from Owsiak (2012)
Third-party assistance	Dichotomous: whether third-party assisted dyad with border settlement process in previous year. Strategies counted include mediation, arbitration, adjudication, post-war conference, and/or administrative delimitation of border.	Collected, original
Bilateral negotiations (total)	Count: total number of negotiations that dyad held over disputed border prior to observation year.	Collected, original
Joint Democracy	Dichotomous: whether both dyad members score +6 or higher on the Polity IV index.	Marshall & Jaggers (2013)
Relative Capabilities (ln)	Ratio: natural log of the ratio of the weaker to the stronger state's capabilities, as measured by Correlates of War CINC scores.	Singer, et al. (1972)
Alliance	Dichotomous: whether dyad members are allied to one another in any way.	Leeds, et al. (2002)
Rivalry (dyad)	Dichotomous: whether dyad members are rivals.	Colaresi, et al. (2007)
Years since leadership change	Count: years since either dyad member experienced a change in government leadership (executive).	Chiozza & Goemans (2011)
Total rivals of dyad members	Count: total number of contiguous rivals to members in the dyad.	Colaresi, et al. (2007)
Post WWI	Dichotomous: whether year is 1918-1923 (inclusive).	Created
Post WWII	Dichotomous: whether year is 1945-1950 (inclusive).	Created
Dyad age	Count: age of dyad (in years).	Correlates of War Project (2008)
Dyad age^2	Count: square of the age of dyad (in years).	Correlates of War Project (2008)
Dyad age^3	Count: cube of the age of dyad (in years).	Correlates of War Project (2008)
Salience of current ICOW claim (ICOW)	Index: the salience level of the current ICOW claim. Coded 0 (no claim) and 1-12 for claims, where 12=most salient.	Hensel et al. (2008)
Intrastate conflict	Dichotomous: whether *either* state in the dyad has an intrastate conflict in a given dyad-year	Sarkees & Wayman (2010)

Variables used in robustness check models below:

Major state (one dyad member)	Dichotomous: whether only one member of the dyad qualifies as a major state according to the Correlates of War Project.	Correlates of War Project (2008)
Major state (both dyad members)	Dichotomous: whether both members of the dyad qualify as major states according to the Correlates of War Project.	Correlates of War Project (2008)
Rel. cap. (ln) * prop. of rel. brdrs. sttld.	Interaction: relative capabilities (ln) * proportion of relevant borders settled.	Derived from above variables.
Number of borders in dyad	Count: the dyad's total number of land contiguous, neighboring states.	Stinnett, et al. (2002), Owsiak (2012)
Number of unsettled borders in dyad	Count: the dyad's total number of unsettled borders among land contiguous, neighboring states.	Stinnett, et al. (2002), Owsiak (2012)
Dyadic domestic instability (Banks)	Index: sum of the Banks domestic instability index for each dyad member.	Banks & Wilson (2012)
Dyadic interstate war (max.; PRIO)	Ordered: highest amount of interstate conflict for *either* dyad member (0:no conflict, 1:25<x<100 deaths; 2: >100 deaths).	Gleditsch, et al. (2005), v.3-2005
Dyadic civil war (max.; PRIO)	Ordered: highest amount of civil conflict for *either* dyad member (0:no conflict, 1:25<x<100 deaths; 2: >100 deaths).	Gleditsch, et al. (2005), v.3-2005
Dyad at war (MID)	Dichotomous: Whether dyad members at war with one another.	Ghosn, et al. (2004), from Bennett and Stam (2000)
Dyad hostility (max.; MID)	Ordered: Highest level of interstate hostility in the dyad (1:no militarized action, 2:threats, 3:display of force, 4:use of force, 5:war).	Ghosn, et al. (2004), from Bennett and Stam (2000)
Number of relevant borders settled	Count: number of a dyad's borders that are settled before the observation year.	Owsiak (2012)
Number of border agmts in previous 1 yr.	Count: number of border agmts that both dyad members sign with their other, land contiguous, neighboring states in the year prior to the observation.	Created from Owsiak (2012)
Number of border agmts in previous 2-6 yrs.	Count: number of border agmts that both dyad members sign with their other, land contiguous, neighboring states in the 2-6 years prior to the observation.	Created from Owsiak (2012)
Number of border agmts in previous 7-11 yrs.	Count: number of border agmts that both dyad members sign with their other, land contiguous, neighboring states in the 7-11 years prior to the observation.	Created from Owsiak (2012)
Number of border agmts in previous 12-16 yrs.	Count: number of border agmts that both dyad members sign with their other, land contiguous, neighboring states in the 12-16 years prior to the observation.	Created from Owsiak (2012)
Average salience of previously settled claims (ICOW)	Index: the average salience level of all previously settled, relevant ICOW claims (i.e., those involving at least one member of the dyad). Coded 0 (no claim) and 1-12 for claims, where 12=most salient.	Hensel et al. (2008)
Prop. of rel. brdrs. sttld.* Avg. sal. of prev. settled claims	Interaction: proportion of relevant borders settled * average salience of previously settled claims (ICOW)	Derived from above variables.
Prop. of rel. brdrs. sttld* Current claim salience	Interaction: proportion of relevant borders settled * salience of current ICOW claim (ICOW)	Derived from above variables.
Legal claim strength (HCA)	Ordered: 0=no claim, 1=claim, but no dyad member has a strong legal claim, 2=claim, one dyad member has a strong claim. Variable assumes the maximum value obtained by the dyad in the years prior to the current observation.	Huth, Croco, and Appel (2013)
Prop. of rel. brdrs. sttld* Weak legal claim	Interaction: proportion of relevant borders settled * weak legal claims (HCA)	Derived from above variables.
Prop. of rel. brdrs. sttld* Strong legal claim	Interaction: proportion of relevant borders settled * strong legal claims (HCA)	Derived from above variables.

Shared colonial network	Dichotomous: Do dyad members either (a) share a colonial parent in their history, or (b) have a relationship in which one of them was historically a colonial parent of the other.	Hensel (2014)
Prop. of rel. brdrs. sttld.* Shared colonial network	Interaction: proportion of relevant borders settled * shared colonial network.	Derived from above variables.
Relative capabilities (ln)* Current claim salience	Interaction: relative capabilities * salience of current ICOW claim (ICOW)	Derived from above variables.
Third-party assistance* Current claim salience	Interaction: third-party assistance * salience of current ICOW claim (ICOW)	Derived from above variables.
Bilateral negotiations (total) * Current claim salience	Interaction: bilateral negotiations (total) * salience of current ICOW claim (ICOW)	Derived from above variables.
Years since relevant settlement (ln)	Natural log of "years since relevant settlement"	Derived from above variables.
Prop. of rel. brdrs. sttld.* Yrs. since rel. settle(ln)	Interaction: proportion of relevant borders settled * years since relevant settlement (ln)	Derived from above variables.
Dyad age (ln)	Natural log of "Dyad age"	Derived from above variables.
Spline (revset)	Restricted cubic spline created from "Years since relevant settlement"	Derived from above variables.
$Spline^2$ (revset)	Restricted cubic spline created from "Years since relevant settlement"	Derived from above variables.
$Spline^3$ (revset)	Restricted cubic spline created from "Years since relevant settlement"	Derived from above variables.
Spline (noset)	Restricted cubic spline created from "Dyad age"	Derived from above variables.
$Spline^2$ (noset)	Restricted cubic spline created from "Dyad age"	Derived from above variables.
$Spline^3$ (noset)	Restricted cubic spline created from "Dyad age"	Derived from above variables.
Claim, no major concession	Dichotomous: whether *no* members of the dyad made a major concession in any of their joint territorial claims	Huth and Allee (2002)
Claim, major concession	Dichotomous: whether *either* member of the dyad made a major concession in any of their joint territorial claims	Huth and Allee (2002)
Third-party assistance (total)	Count: total number of third-party assistance that dyad held over disputed border prior to observation year. Used in selection model to separate "attempts" from cumulative weight of third-party assistance.	Collected, original

Part B1: General Robustness Models.

Table B2. Logistic Regression Predicting Border Settlement, 1816-2001.

	(1)	(2)	(3)	(4)	(5)
Proportion of relevant borders settled	1.732***	1.781**	1.759***	1.251**	1.771***
	(0.431)	(0.670)	(0.437)	(0.441)	(0.441)
Years since relevant settlement	-0.0851*	-0.0812*	-0.0809*	-0.0869*	-0.0907*
	(0.0415)	(0.0415)	(0.0411)	(0.0405)	(0.0448)
Years since relevant settlement^2	0.00228	0.00224	0.00224*	0.00231*	0.00254*
	(0.00140)	(0.00138)	(0.00136)	(0.00131)	(0.00150)
Years since relevant settlement^3	-8.30e-06	-8.04e-06	-8.02e-06	-8.91e-06	-9.80e-06
	(1.18e-05)	(1.16e-05)	(1.14e-05)	(1.10e-05)	(1.25e-05)
Third-party assistance	2.463***	2.494***	2.496***	2.460***	2.388***
	(0.469)	(0.463)	(0.468)	(0.459)	(0.480)
Bilateral negotiations (total)	0.678***	0.655***	0.654***	0.679***	0.680***
	(0.112)	(0.113)	(0.112)	(0.114)	(0.120)
Joint Democracy	0.806*	0.859*	0.862*	0.708	0.849*
	(0.447)	(0.436)	(0.433)	(0.448)	(0.439)
Relative Capabilities (ln)	0.315***	0.248	0.255**	0.238**	0.251**
	(0.0900)	(0.208)	(0.0869)	(0.0883)	(0.0891)
Alliance	0.0581	0.0469	0.0470	0.0510	0.127
	(0.279)	(0.280)	(0.279)	(0.278)	(0.286)
Rivalry (dyad)	-1.571***	-1.566***	-1.562***	-1.692***	-1.656***
	(0.339)	(0.339)	(0.339)	(0.349)	(0.335)
Years since leadership change	-0.0235	-0.0230	-0.0226	-0.0296	-0.0399
	(0.0273)	(0.0260)	(0.0261)	(0.0276)	(0.0288)
Total rivals of dyad members	0.177*	0.196*	0.194*	0.247**	0.206*
	(0.0977)	(0.0985)	(0.103)	(0.100)	(0.102)
Post WWI	0.0184	0.0148	0.0113	0.126	0.0364
	(0.501)	(0.510)	(0.511)	(0.502)	(0.509)
Post WWII	0.390	0.453	0.453	0.452	0.415
	(0.558)	(0.552)	(0.552)	(0.546)	(0.563)
Major state (one dyad member)	0.478				
	(0.329)				
Major state (both dyad members)	-2.146				
	(1.838)				
Dyad age	-0.0921**	-0.0909**	-0.0909**	-0.0856**	-0.0979**
	(0.0311)	(0.0333)	(0.0332)	(0.0324)	(0.0359)
Dyad age^2	0.00121*	0.00119*	0.00119*	0.00110*	0.00128*
	(0.000598)	(0.000670)	(0.000672)	(0.000646)	(0.000717)
Dyad age^3	-5.12e-06*	-5.36e-06	-5.37e-06	-4.90e-06	-5.73e-06
	(3.11e-06)	(3.55e-06)	(3.60e-06)	(3.40e-06)	(3.79e-06)
Rel. cap. (ln) * prop. of rel. brdrs. sttld.		0.00937			
		(0.255)			
Number of borders in dyad			0.00306		
			(0.0396)		
Number of unsettled borders in dyad				-0.170*	
				(0.0949)	
Total dyadic trade					-1.09e-05
					(5.58e-05)
Constant	-2.937***	-3.031***	-3.035***	-2.478***	-2.934***
	(0.517)	(0.643)	(0.535)	(0.535)	(0.525)
Observations	2,746	2,746	2,746	2,746	2,571

Notes: Robust standard errors in parentheses. One-tailed test: *** p<0.001, ** p<0.01, * p<0.05

Table B2 (cont.).

	(6)	(7)	(8)	(9)
Proportion of relevant borders settled	1.698***	1.362*	1.762***	1.784***
	(0.510)	(0.664)	(0.427)	(0.434)
Years since relevant settlement	-0.0627	-0.0297	-0.0813*	-0.0803*
	(0.0489)	(0.0691)	(0.0411)	(0.0411)
Years since relevant settlement^2	0.00133	-1.85e-05	0.00225*	0.00225*
	(0.00167)	(0.00292)	(0.00136)	(0.00135)
Years since relevant settlement^3	9.88e-07	1.37e-05	-8.02e-06	-8.23e-06
	(1.59e-05)	(3.18e-05)	(1.14e-05)	(1.14e-05)
Third-party assistance	1.945***	2.704***	2.494***	2.507***
	(0.569)	(0.754)	(0.463)	(0.473)
Bilateral negotiations (total)	0.701***	0.693***	0.654***	0.652***
	(0.159)	(0.201)	(0.112)	(0.112)
Joint Democracy	0.820*	0.805	0.857*	0.853*
	(0.430)	(0.525)	(0.435)	(0.440)
Relative Capabilities (ln)	0.236**	0.221*	0.256**	0.260**
	(0.0861)	(0.0983)	(0.0871)	(0.0873)
Alliance	-0.0682	-0.0424	0.0457	0.0543
	(0.313)	(0.390)	(0.278)	(0.279)
Rivalry (dyad)	-1.883***	-2.228***	-1.564***	-1.534***
	(0.385)	(0.573)	(0.333)	(0.333)
Years since leadership change	-0.0740*	-0.0662	-0.0230	-0.0238
	(0.0435)	(0.0494)	(0.0260)	(0.0261)
Total rivals of dyad members	0.269**	0.297*	0.197*	0.195*
	(0.114)	(0.155)	(0.0997)	(0.0993)
Post WWI	0.153		0.0148	0.0171
	(0.505)		(0.513)	(0.525)
Post WWII	0.662	0.806	0.462	0.466
	(0.568)	(0.634)	(0.552)	(0.548)
Dyad age	-0.0835*	-0.0897*	-0.0911**	-0.0925**
	(0.0371)	(0.0459)	(0.0331)	(0.0329)
Dyad age^2	0.00113	0.00120	0.00119*	0.00122*
	(0.000747)	(0.000909)	(0.000669)	(0.000661)
Dyad age^3	-5.32e-06	-5.56e-06	-5.37e-06	-5.49e-06
	(3.90e-06)	(4.82e-06)	(3.54e-06)	(3.50e-06)
Dyadic domestic instability (Banks)	-9.85e-05*			
	(5.63e-05)			
Dyadic interstate war (max.; PRIO)		-0.136		
		(0.395)		
Dyadic civil war (max.; PRIO)		-0.388		
		(0.250)		
Dyad at war (MID)			-0.238	
			(1.087)	
Dyad hostility (max.; MID)				-0.0926
				(0.0967)
Constant	-2.701***	-2.649***	-3.013***	-2.987***
	(0.624)	(0.838)	(0.501)	(0.506)
Observations	1,680	1,268	2,746	2,746

Notes: Robust standard errors in parentheses. One-tailed test: *** p<0.001, ** p<0.01, * p<0.05

Part B2: Number of Relevant Settlements.

This table re-runs the analysis from Table 1 (in manuscript) using the *number* of relevant borders settled instead of the *proportion*. This change appears in the first row of the table. Our substantive findings do not change.

Table B3. Logistic Regressions Predicting Border Settlement, 1816-2001.

	(1)	(2)	(3)	(4)	(5)
Number of relevant borders settled	0.0755*		0.0970**		0.0887*
	(0.0333)		(0.0412)		(0.0416)
Years since relevant settlement	-0.0950**		-0.0666*		-0.0733*
	(0.0389)		(0.0386)		(0.0408)
Years since relevant settlement^2	0.00210		0.00121		0.00163
	(0.00128)		(0.00134)		(0.00135)
Years since relevant settlement^3	-8.33e-06		1.78e-06		-2.70e-06
	(1.13e-05)		(1.14e-05)		(1.12e-05)
Third-party assistance		2.351***	2.550***	2.176***	2.380***
		(0.411)	(0.445)	(0.429)	(0.462)
Bilateral negotiations (total)		0.566***	0.619***	0.540***	0.603***
		(0.102)	(0.108)	(0.108)	(0.118)
Joint Democracy		1.036**	0.844*	1.055**	0.881*
		(0.386)	(0.438)	(0.408)	(0.449)
Relative Capabilities (ln)		0.178*	0.194*	0.262**	0.258**
		(0.0881)	(0.0838)	(0.0974)	(0.0913)
Alliance		0.114	0.0562	0.144	0.111
		(0.243)	(0.249)	(0.273)	(0.280)
Rivalry (dyad)		-1.191***	-1.268***	-1.440***	-1.407***
		(0.263)	(0.286)	(0.318)	(0.328)
Years since leadership change				-0.0178	-0.0219
				(0.0260)	(0.0245)
Total rivals of dyad members				0.200*	0.139
				(0.0978)	(0.0998)
Post WWI		0.0859	0.0658	-0.125	-0.0949
		(0.469)	(0.505)	(0.478)	(0.506)
Post WWII		0.411	0.501	0.309	0.424
		(0.523)	(0.534)	(0.516)	(0.532)
Dyad age	-0.0611*	-0.113***	-0.0759*	-0.120***	-0.0838*
	(0.0321)	(0.0273)	(0.0363)	(0.0278)	(0.0372)
Dyad age^2	0.000920	0.00178***	0.00104	0.00184***	0.00112
	(0.000717)	(0.000575)	(0.000771)	(0.000583)	(0.000789)
Dyad age^3	-3.79e-06	-8.30e-06**	-5.24e-06	-8.30e-06**	-5.32e-06
	(4.09e-06)	(3.21e-06)	(4.34e-06)	(3.23e-06)	(4.38e-06)
Constant	-2.590***	-2.215***	-2.458***	-2.036***	-2.272***
	(0.227)	(0.307)	(0.313)	(0.398)	(0.413)
Observations	3,312	3,312	3,312	2,746	2,746

Notes: Robust standard errors in parentheses. One-tailed test: *** p<0.001, ** p<0.01, * p<0.05

Part B3: Conditional Logistic Regression.

This table re-runs the analysis from Table 1 (in manuscript) using the *conditional logistic regression* instead of *logistic regression*. The conditional logistic regression is the Cox model equivalent for discrete time models (see Box-Steffensmeier & Jones 2004:80-83). Our substantive findings do not change.

Table B4. Conditional Logistic Regression Predicting Border Settlement, 1816-2001.

	(1)	(2)	(3)	(4)	(5)
Proportion of relevant borders settled	1.161**		1.508***		1.654***
	(0.402)		(0.477)		(0.494)
Years since relevant settlement	-0.0662		-0.0569		-0.0910
	(0.0456)		(0.0600)		(0.0625)
Years since relevant settlement^2	0.00151		0.00118		0.00276
	(0.00147)		(0.00216)		(0.00205)
Years since relevant settlement^3	-5.15e-06		2.19e-06		-1.32e-05
	(1.17e-05)		(1.88e-05)		(1.62e-05)
Third-party assistance		2.311***	2.618***	2.131***	2.468***
		(0.538)	(0.519)	(0.568)	(0.573)
Bilateral negotiations (total)		0.577***	0.657***	0.536***	0.643***
		(0.103)	(0.0961)	(0.115)	(0.114)
Joint Democracy		0.712	0.558	0.745	0.556
		(0.523)	(0.560)	(0.534)	(0.550)
Relative Capabilities (ln)		0.157	0.174*	0.242**	0.236**
		(0.102)	(0.0959)	(0.102)	(0.0900)
Alliance		0.155	0.000148	0.157	0.0609
		(0.204)	(0.237)	(0.270)	(0.258)
Rivalry (dyad)		-1.062***	-1.207***	-1.248***	-1.335***
		(0.320)	(0.356)	(0.359)	(0.381)
Years since leadership change				-0.0165	-0.0210
				(0.0238)	(0.0254)
Total rivals of dyad members				0.156*	0.128
				(0.0940)	(0.108)
Post WWI		0.0668	0.110	-0.168	-0.0212
		(0.890)	(0.956)	(0.863)	(0.918)
Post WWII		-0.00489	0.0369	-0.0894	-0.0364
		(0.878)	(1.007)	(0.826)	(0.941)
Observations	2,197	2,197	2,197	1,697	1,697

Notes: Robust standard errors in parentheses. One-tailed test: *** p<0.001, ** p<0.01, * p<0.05

Part B4: Number of Previous Agreements,.

This table re-runs the analysis from Table 1 (in manuscript). In the table below, however, we use a series of variables to capture the number of border agreements signed in various time periods prior to the current observation. This ensures that our proportion variable (used within the manuscript) does not drive our results (i.e., that as a dyad settles more of its outstanding borders, we are not simply observing them concentrate their efforts on the remaining, unsettled borders).

Our substantive findings do not change. We find that the "recency" of signed agreements affects the likelihood of further border settlements, which has nothing to do with how many borders remain outstanding. That is, a dyad is significantly more likely to settle its border if a dyad member signed a border agreement with another neighbor in the previous 1-6 years. This aligns with our argument that diffusion effects decay over time.

Table B5. Logistic Regression Predicting Border Settlement, 1816-2001.

	(1)	(2)	(3)	(4)
Number of border agmts in previous 1 yr.	0.777***	0.725**	0.800**	0.867*
	(0.168)	(0.247)	(0.305)	(0.376)
Third-party assistance	2.203***	2.478***	2.632***	1.726*
	(0.446)	(0.741)	(0.832)	(1.019)
Bilateral negotiations (total)	0.538***	0.489***	0.498***	0.510***
	(0.111)	(0.125)	(0.139)	(0.165)
Joint Democracy	0.930*	0.889	1.002	1.183
	(0.448)	(0.571)	(0.702)	(0.877)
Relative Capabilities (ln)	0.225*	0.102	0.0574	0.231
	(0.0979)	(0.126)	(0.154)	(0.207)
Alliance	0.221	0.545	0.494	0.739
	(0.272)	(0.366)	(0.468)	(0.550)
Rivalry (dyad)	-1.325***	-0.744	-0.456	-0.667
	(0.326)	(0.453)	(0.523)	(0.621)
Years since leadership change	-0.0150	0.0209	0.0273	0.0278
	(0.0263)	(0.0274)	(0.0312)	(0.0382)
Total rivals of dyad members	0.177*	0.123	0.0797	0.133
	(0.0992)	(0.123)	(0.155)	(0.177)
Post WWI	-0.682			
	(0.521)			
Post WWII	-0.0544	-0.318	-0.737	0.0177
	(0.524)	(0.789)	(1.193)	(1.004)
Dyad age	-0.107***	-0.0596	-0.0743	-0.231**
	(0.0286)	(0.0477)	(0.0658)	(0.0940)
Dyad age^2	0.00164**	0.000833	0.00104	0.00413**
	(0.000604)	(0.000913)	(0.00116)	(0.00159)
Dyad age^3	-7.52e-06*	-3.90e-06	-4.71e-06	-2.16e-05**
	(3.37e-06)	(4.71e-06)	(5.76e-06)	(8.10e-06)
Number of border agmts in previous 2-6 yrs.		0.460**	0.453*	0.505*
		(0.152)	(0.235)	(0.268)
Number of border agmts in previous 7-11 yrs.			0.205	0.360
			(0.219)	(0.292)
Number of border agmts in previous 12-16 yrs.				0.363
				(0.344)
Constant	-2.432***	-3.843***	-3.756***	-1.777
	(0.426)	(0.798)	(1.124)	(1.643)
Observations	2,746	1,921	1,451	1,107

Notes: Robust standard errors in parentheses. One-tailed test: *** p<0.001, ** p<0.01, * p<0.05

Part B5: Claim Characteristics.

Table B6 below re-runs the analysis from Model 3 in Table 1 (in manuscript). In the models below, however, we use a series of variables to capture: a) the effect of border territory claim characteristics on border settlement generally, and b) whether border claim characteristics condition our diffusion process (interaction terms).

With respect to territorial claim salience, the analysis below yields several conclusions. First, when a dyad has settled none of its other borders (i.e., proportion of relevant past borders settled=0), the likelihood of border settlement decreases as the salience of a current claim increases (lower-order term; Models 1-3). Second, the average salience (at the time of settlement) of all previously settled claims does not significantly affect a dyad's likelihood of border settlement. Third, while the average salience of all previously settled claims does not significantly alter the marginal effect of the proportion of relevant borders settled, the maximum salience of the dyad's shared border appears to significantly decrease the diffusion effect at the center of our argument.

Figure B1 demonstrates that the average salience of previously settled, relevant territorial border claims does not significantly condition the diffusion effect. The marginal effect of a one-unit increase in the proportion of relevant borders settled (our main variable of interest) remains positive and statistically significant – with no statistically significant variance – across the entire range of the values for this salience variable. Figure B2 plots the marginal effect of our variable of interest – the proportion of relevant borders settled previously – on the likelihood that a given dyad's border settles across all values of the dyad's most salient active territorial (border) claim. As the lower-order terms suggest, when there is no active territorial claim (i.e., the salience index receives a score of 0), the proportion of relevant borders previously settled has a large positive effect on the likelihood of border settlement. This effect declines (but persists) across low levels of the salience index as well. Finally, at high levels of a current claim's salience (index=7-12), the proportion of relevant borders previously settled exerts no marginal substantive effect on the likelihood of border settlement. This finding makes some intuitive sense. It suggests that, as a dyad's (unsettled) border becomes more salient to the dyad members, the "signal" they get from other, relevant border settlements declines. Greater salience – quite simply – makes disputants less likely to gather (and use) information from past settlements. Future research might investigate this finding in greater detail.

To further understand the effects of salience, we also ran versions of our model that interact salience with some of the independent variables that significantly affects the likelihood of border settlement. This analysis appears in Table B7 below. Through the models in this table, we learn that salience conditions most of our significant results. In other words, it is not simply that salience conditions the diffusion effect. Rather, as shown in Figure B3 below, it also conditions the effects of many of our main alternative theoretical explanations and control variables (95% confidence intervals shown). That is, it largely appears that highly salient borders are very difficult to settle, to the point that most of the explanations we have for border settlement are shown to be insignificant above some (high) level of salience.

The broad effects of salience yield three conclusions. First, scholars simply do not yet fully understand how highly salient borders settle; their various theoretical mechanisms seem overwhelmed when salience becomes strong. Future research might therefore focus more specifically on the details of these highly salient cases – to understand better how these borders settle. We think our study offers a foundation from which this future research might work and therefore represents a step in the right direction. Second, our diffusion mechanism performs similarly to other potential alternative explanations when trying to explain the settlement of highly salient borders (see Figure B3). We therefore believe the diffusion mechanism has value, despite these conditional effects. Third, the effects of salience further support our theoretical argument. If diffusion works via signaling as we propose, then we might expect the signal *not* to alter settlement patterns when salience becomes too high. In these cases, the signaling actor sends the signal (whether they intend to or not), but the receiving and/or signaling state does not use this information to seriously pursue settlement of the salient border. Perhaps they feel the situations involved are too different – that is, settlement in other cases is dissimilar to their pursuit of settlement in this high salience case – or that the value of high salience territory makes the costs of further unsettlement acceptable. Either way, the signal seems of less use in

high salience cases. This helps underscore both that one state's willingness is not sufficient for settlement and that our argument is probabilistic.

We also uncover two findings that derive from the inclusion of data on a claim's legal strength. First, Model 4 (Table B6) demonstrates that legal claim strength has no significant, independent effect on the likelihood of border settlement. Second, Model 5 (Table B6) yields a similar conclusion, adding (through the interaction term) that legal claim strength has, at best, only minor effects on the diffusion process. To highlight this conditional effect, Figure B4 below shows the marginal effects of an increase in the proportion of relevant borders settled (from 0 to 1) on the likelihood of border settlement at different levels of legal claim strength (90% confidence intervals shown). Although the proportion of relevant borders settled has a significant positive effect on the probability of settlement when no claim (legal claims=0) or a weak claim (legal claims=1) has been made, the proportion of relevant borders has no significant effect when a strong legal claim has been made (legal claims=2).

It is, however, difficult to say much about this finding for three reasons. First, the confidence interval associated with our main variable's marginal effect for strong legal claims overlaps substantially with the confidence intervals at each of the lower levels of legal claim strength (see Figure B4), making it difficult to argue that the effect of diffusion at high levels of legal claim strength is actually significantly different from that observed at lower levels. Second, the Huth, Croco, and Appel (2013) data cover only the period 1945-2000. Their data therefore restrict the time period under investigation, thereby causing the analysis to miss large waves of settlements in the Americas, Europe, and the Middle East. Finally, it appears that the dyads with strong legal claims have settled most of their other borders first. Figure B5 highlights this trend. In the figure, we chart the proportion of relevant borders (previously) settled by each dyad for every individual value of the legal strength variable. The third-panel (strong legal claims) shows a much more right skewed distribution than either of the other values for legal claim strength. We therefore are concerned that states with strong legal claims face a unique situation – one in which they have saved the settlement of their strong legal claim for last. This might occur if losing states impede settlement because, once it is settled, international law will not only discourage them from revising the settlement (as in all cases; see the territorial integrity norm), but also will not afford them any legal arguments on which to potentially base a revision. For these reasons, we conclude that legal claim strength does not significantly condition the effect of relevant border settlement. Nonetheless, future research might revisit this point, especially if additional legal claim strength data become available.

Table B6. Logistic Regression Predicting Border Settlement, 1816-2001.

	(1)	(2)	(3)	(4)	(5)
Proportion of relevant borders settled	1.812***	2.102***	1.550***	1.352*	3.138*
	(0.431)	(0.416)	(0.454)	(0.685)	(1.758)
Average salience of previously settled claims (ICOW)	0.0161		-0.128		
	(0.0523)		(0.127)		
Salience of current ICOW claim (ICOW)	-0.269***	-0.202**	-0.275***		
	(0.0396)	(0.0810)	(0.0402)		
Prop. of rel. brdrs. sttld.* Avg. sal. of prev. settled claims			0.199		
			(0.150)		
Prop. of rel. brdrs. sttld* Current claim salience		-0.104			
		(0.122)			
Legal claim strength (HCA)				0.0129	1.586
				(0.301)	(1.581)
Prop. of rel. brdrs. sttld* Legal claim strength					-1.988
					(1.845)
Years since relevant settlement	-0.105*	-0.107**	-0.108*	-0.0347	-0.0360
	(0.0484)	(0.0454)	(0.0475)	(0.0666)	(0.0670)
Years since relevant settlement^2	0.00310*	0.00304*	0.00323*	0.000151	0.000200
	(0.00186)	(0.00176)	(0.00179)	(0.00274)	(0.00274)
Years since relevant settlement^3	-1.35e-05	-1.30e-05	-1.48e-05	1.17e-05	1.03e-05
	(1.69e-05)	(1.59e-05)	(1.63e-05)	(2.96e-05)	(2.99e-05)
Third-party assistance	2.696***	2.693***	2.676***	2.799***	2.784***
	(0.485)	(0.487)	(0.489)	(0.738)	(0.720)
Bilateral negotiations (total)	0.772***	0.793***	0.813***	0.702***	0.747***
	(0.123)	(0.118)	(0.130)	(0.202)	(0.208)
Joint democracy	1.312*	1.378**	1.205*	0.866	0.982*
	(0.591)	(0.566)	(0.613)	(0.529)	(0.527)
Relative capabilities (ln)	0.261**	0.247**	0.270**	0.224*	0.195
	(0.100)	(0.100)	(0.0987)	(0.113)	(0.121)
Alliance	0.0385	0.0744	-0.0275	0.0302	0.0440
	(0.306)	(0.304)	(0.311)	(0.408)	(0.408)
Rivalry (dyad)	-0.660*	-0.641*	-0.714*	-2.191***	-2.115***
	(0.363)	(0.368)	(0.361)	(0.562)	(0.578)
Years since leadership change	-0.0110	-0.0137	-0.0162	-0.0600	-0.0695
	(0.0291)	(0.0290)	(0.0312)	(0.0498)	(0.0531)
Total rivals of dyad members	0.133	0.135	0.142	0.233	0.180
	(0.101)	(0.0971)	(0.101)	(0.148)	(0.165)
Post WWI	0.355	0.289	0.360	-	-
	(0.550)	(0.574)	(0.551)		
Post WWII	0.326	0.349	0.257	0.475	0.419
	(0.587)	(0.588)	(0.592)	(0.584)	(0.641)
Dyad age	-0.0804**	-0.0773**	-0.0762**	-0.0887*	-0.0851*
	(0.0320)	(0.0317)	(0.0321)	(0.0464)	(0.0456)
Dyad age^2	0.000894	0.000846	0.000834	0.00120	0.00113
	(0.000595)	(0.000598)	(0.000597)	(0.000941)	(0.000933)
Dyad age^3	-3.69e-06	-3.50e-06	-3.51e-06	-5.66e-06	-5.43e-06
	(3.06e-06)	(3.10e-06)	(3.08e-06)	(5.04e-06)	(4.99e-06)
Constant	-2.245***	-2.474***	-2.049***	-2.840***	-4.293**
	(0.492)	(0.477)	(0.490)	(0.806)	(1.623)
Observations	2,746	2,746	2,746	1,280	1,280

Notes: Robust standard errors in parentheses. One tailed tests *** p<0.001, ** p<0.01, * p<0.05

Table B7. Logistic Regression Predicting Border Settlement, 1816-2001.

	(1)	(2)	(3)	(4)
Proportion of relevant borders settled	2.111***	1.857***	1.938***	1.822***
	(0.425)	(0.441)	(0.435)	(0.431)
Salience of current ICOW claim (ICOW)	-0.197**	-0.259***	-0.205***	-0.260***
	(0.0823)	(0.0370)	(0.0449)	(0.0550)
Prop. of rel. brdrs. sttld* Current claim salience	-0.108			
	(0.123)			
Years since relevant settlement	-0.107**	-0.107*	-0.116**	-0.107*
	(0.0458)	(0.0470)	(0.0489)	(0.0469)
Years since relevant settlement^2	0.00304*	0.00305	0.00334*	0.00310*
	(0.00178)	(0.00187)	(0.00196)	(0.00185)
Years since relevant settlement^3	-1.26e-05	-1.22e-05	-1.43e-05	-1.29e-05
	(1.64e-05)	(1.74e-05)	(1.82e-05)	(1.72e-05)
Third-party assistance	2.651***	2.934***	2.740***	2.653***
	(0.483)	(0.897)	(0.491)	(0.484)
Third-party assistance* Current claim salience		-0.0502		
		(0.126)		
Bilateral negotiations (total)	0.774***	0.770***	0.990***	0.764***
	(0.118)	(0.118)	(0.149)	(0.117)
Bilateral negotiations (total)* Current claim salience			-0.0525*	
			(0.0235)	
Intrastate conflict	-0.578	-0.553	-0.493	-0.568
	(0.414)	(0.407)	(0.404)	(0.408)
Joint democracy	1.272*	1.236*	1.159*	1.248*
	(0.580)	(0.597)	(0.574)	(0.582)
Relative capabilities (ln)	0.253**	0.259**	0.276**	0.251*
	(0.101)	(0.0974)	(0.0991)	(0.117)
Relative capabilities (ln)* Current claim salience				0.00309
				(0.0261)
Alliance	0.104	0.0762	0.0474	0.0838
	(0.303)	(0.299)	(0.299)	(0.305)
Rivalry (dyad)	-0.739*	-0.771*	-0.744*	-0.765*
	(0.386)	(0.382)	(0.375)	(0.380)
Years since leadership change	-0.0169	-0.0164	-0.00813	-0.0154
	(0.0298)	(0.0295)	(0.0290)	(0.0294)
Total rivals of dyad members	0.161	0.169	0.161	0.166
	(0.103)	(0.104)	(0.103)	(0.102)
Post WWI	0.324	0.420	0.343	0.378
	(0.570)	(0.584)	(0.567)	(0.550)
Post WWII	0.435	0.415	0.350	0.399
	(0.566)	(0.564)	(0.572)	(0.562)
Dyad age	-0.0794**	-0.0790**	-0.0786**	-0.0801**
	(0.0315)	(0.0313)	(0.0316)	(0.0313)
Dyad age^2	0.000858	0.000856	0.000790	0.000876
	(0.000587)	(0.000584)	(0.000585)	(0.000585)
Dyad age^3	-3.42e-06	-3.46e-06	-2.88e-06	-3.54e-06
	(3.03e-06)	(3.02e-06)	(3.04e-06)	(3.02e-06)
Constant	-2.355***	-2.203***	-2.401***	-2.160***
	(0.482)	(0.503)	(0.512)	(0.501)
Observations	2,746	2,746	2,746	2,746

Notes: Robust standard errors in parentheses. One tailed tests *** p<0.001, ** p<0.01, * p<0.05

Figure B1. Marginal Effect of Proportion of Relevant Borders Settled on Border Settlement as Relevant Borders' Salience Changes.

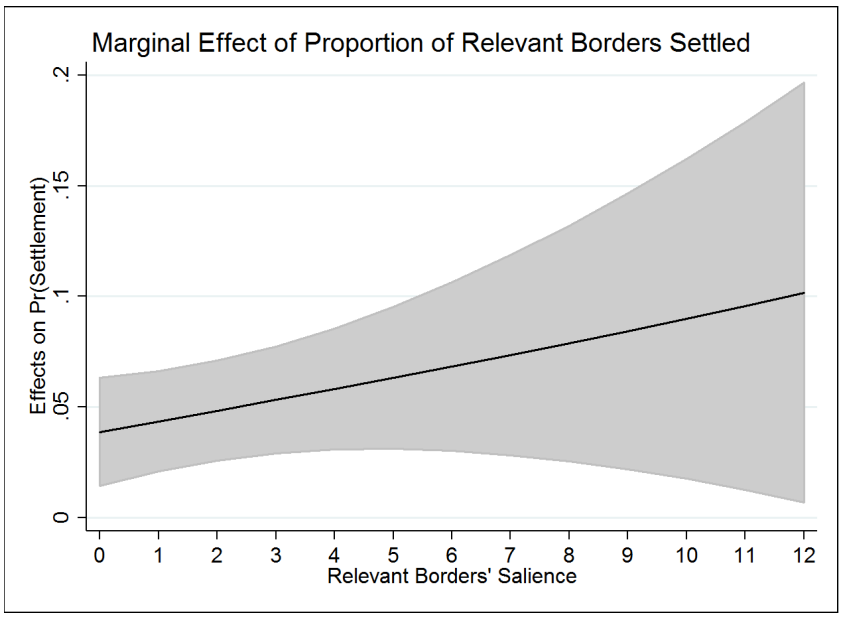


Figure B2. Marginal Effect of Proportion of Relevant Borders Settled on Border Settlement as the Salience of the Dyad's Shared Border Changes.

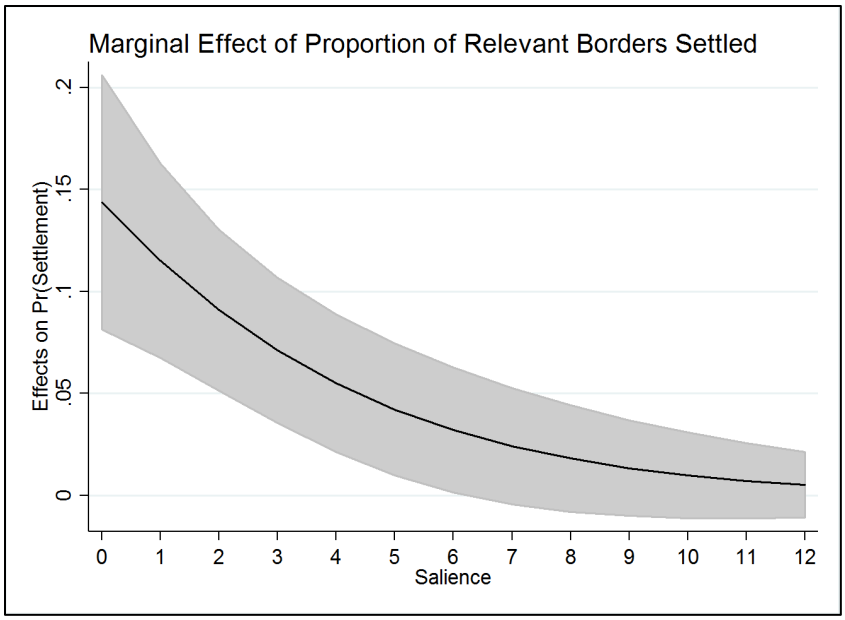


Figure B3. Marginal Effects of Four Variables on the Probability of Border Settlement as the Salience of the Dyad's Shared Border Changes.

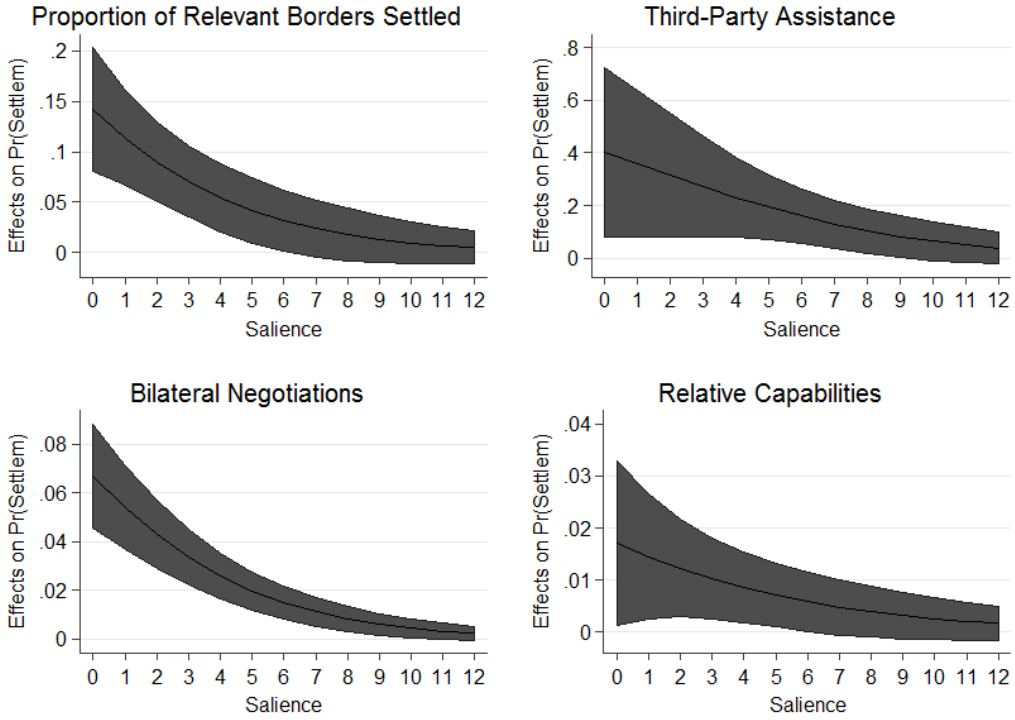


Figure B4. Marginal Effect of Proportion of Relevant Borders Settled on Border Settlement as the Maximum Strength of Either Dyad Member's Legal Claim Changes.

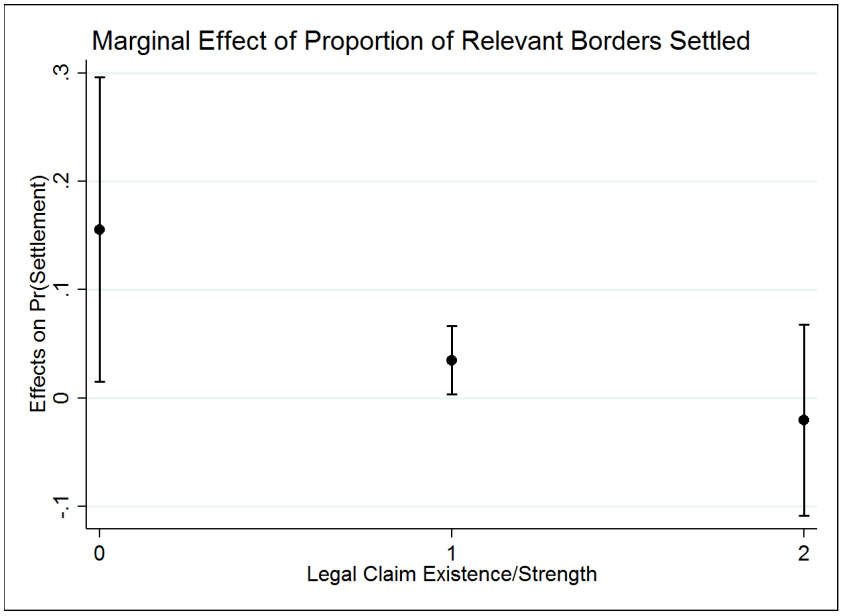
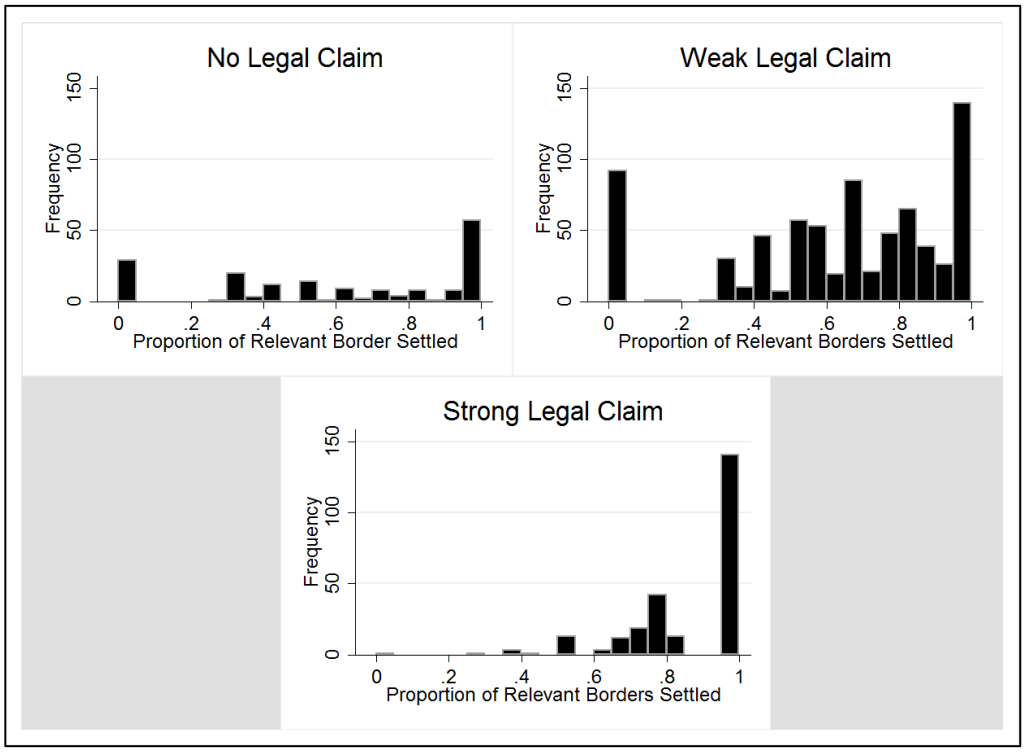


Figure B5. Distribution of Dyad-Year Observations by Legal Claim Strength, 1945-2000.



Part B6: Colonial Networks.

This table re-runs the analysis from Model 3 in Table 1 (in manuscript). Here, we control for shared colonial network (i.e., whether the dyad members shared a colonial ruler or whether one dyad member served as a colonial ruler to the other). Shared colonial network does not seem to affect border settlement, and our substantive findings do not change.

Table B8. Logistic Regression Predicting Border Settlement, 1816-2001.

	(1)	(2)
Proportion of relevant borders settled	1.765***	1.560**
	(0.425)	(0.611)
Shared colonial network	-0.214	-0.504
	(0.281)	(0.636)
Prop. of rel. brdrs. sttld.* Shared colonial network		0.435
		(0.886)
Years since relevant settlement	-0.0786*	-0.0804*
	(0.0418)	(0.0418)
Years since relevant settlement^2	0.00222	0.00233*
	(0.00137)	(0.00137)
Years since relevant settlement^3	-7.84e-06	-8.78e-06
	(1.15e-05)	(1.16e-05)
Third-party assistance	2.498***	2.495***
	(0.466)	(0.470)
Bilateral negotiations (total)	0.661***	0.669***
	(0.112)	(0.114)
Joint democracy	0.908*	0.923*
	(0.438)	(0.443)
Relative capabilities (ln)	0.273**	0.263**
	(0.0945)	(0.0992)
Alliance	0.00758	0.0113
	(0.286)	(0.287)
Rivalry (dyad)	-1.538***	-1.524***
	(0.342)	(0.346)
Years since leadership change	-0.0279	-0.0286
	(0.0271)	(0.0272)
Total rivals of dyad members	0.186*	0.190*
	(0.102)	(0.103)
Post WWI	-0.0346	-0.0557
	(0.509)	(0.515)
Post WWII	0.482	0.497
	(0.554)	(0.555)
Dyad age	-0.0896**	-0.0890**
	(0.0337)	(0.0333)
Dyad age^2	0.00118*	0.00117*
	(0.000683)	(0.000675)
Dyad age^3	-5.40e-06	-5.33e-06
	(3.65e-06)	(3.60e-06)
Constant	-2.887***	-2.790***
	(0.551)	(0.557)
Observations	2,746	2,746

Notes: Robust standard errors in parentheses. One tailed tests *** p<0.001, ** p<0.01, * p<0.05

Part B7: Probit with Sample Selection.

This table re-runs the analysis from Model 3 in Table 1 (in manuscript). In this table, however, , we estimate a probit model with sample selection (via the heckprob command in Stata 13.1) to consider the possibility that there are two stages in the settlement process: (a) attempting a settlement (through bilateral negotiations or third-party assistance) and (b) achieving a settlement. To aid in identification, we include a variable in the selection stage that does not appear in the outcome stage: a measure indicating whether the dyad members share a historical colonial network (Hensel 2014). Conflict management research (e.g., see Greig 2005; Greig and Regan 2008) suggests that this variable may affect the likelihood that disputants attempt conflict management (i.e., attempts, or the selection stage), but our research shows that it does not significantly affect the likelihood of border settlement (i.e., settlement, or the outcome stage; on the effects of shared colonial networks on border settlement, see Part B6 above).

Two findings emerge from this model. First, selection does not appear to be biasing our results. Rho is statistically insignificant (Wald test: χ^2=0.48, p<0.4899), suggesting that the disturbances of the two equations are not correlated and that we cannot reject the null hypothesis that these two equations are independent. Second, our substantive results do not change, even if we employ a selection model.

Table B9. Probit with Sample Selection Predicting Settlement Attempt & Border Sttlmt., 1816-2001.

	(1) Attempt	(2) Settlement
Proportion of relevant borders settled	-0.105	1.000**
	(0.0933)	(0.336)
Years since relevant settlement	-0.00565	-0.0285
	(0.0105)	(0.0227)
Years since relevant settlement^2	9.29e-06	0.000645
	(0.000410)	(0.000842)
Years since relevant settlement^3	-1.43e-06	-4.28e-07
	(4.26e-06)	(8.17e-06)
Third-party assistance (total)		0.304***
		(0.0756)
Bilateral negotiations (total)		0.120*
		(0.0651)
Joint democracy	0.118	0.401
	(0.116)	(0.295)
Relative capabilities (ln)	0.0441*	0.167**
	(0.0207)	(0.0618)
Alliance	0.0859	0.139
	(0.0649)	(0.134)
Rivalry (dyad)	0.412***	-0.941***
	(0.0742)	(0.290)
Years since leadership change	-0.00351	0.00236
	(0.00555)	(0.0133)
Total rivals of dyad members	-0.297***	0.113
	(0.0242)	(0.105)
Post WWI	0.951***	0.330
	(0.145)	(0.202)
Post WWII	-0.486**	-0.390
	(0.158)	(0.380)
Dyad age	0.0570***	-0.0313
	(0.00712)	(0.0283)
Dyad age^2	-0.000403**	0.000402
	(0.000140)	(0.000428)
Dyad age^3	1.07e-06	-1.70e-06
	(7.39e-07)	(1.88e-06)
Shared colonial network	-0.499***	
	(0.0611)	
Constant	-0.202*	-1.865***
	(0.116)	(0.349)
Rho		0.882
		(1.278)
Observations	2,746	2,746

Notes: Robust standard errors in parentheses. One tailed tests *** p<0.001, ** p<0.01, * p<0.05

Part B8: Model Fit & Out-of-Sample Predictive Power.

We also wanted to demonstrate that accounting for the signaling value of diffusion greatly improves our ability to understand border settlements over a theoretical model that excludes such considerations – for example, a model focusing exclusively instead on attributes internal to the dyad itself. With this goal in mind, we looked at Models 2, 3, and 4 from Table 1 in the main manuscript and compared versions of those models that excluded our main independent variables (i.e., the measure of relevant borders previously settled and the various time counters for the years since a relevant agreement) with models that included those variables. Adding our main independent variables to each of these models improves model fit, suggesting that our measures contribute something of value to the empirical model. Indeed, likelihood ratio tests demonstrate that the spatial models significantly outperform models that exclude the spatial variables (with chi-square statistics for models 2, 3, and 4 of 34.83, 33.98, and 37.8, respectively, each of which are statistically significant at the 0.000001 level).

Of course, we recognize that statistical significance and improved model fit are still rather low bars for demonstrating our variable's contribution to the empirical modeling exercise. We therefore conducted an additional validation exercise to demonstrate that adding the diffusion mechanism increases the predictive power of those models. We first estimated many versions of Models 2, 3, and 4 (individually) that left out our main independent variables, each time leaving out a single dyad's entire time-series and then subsequently using the model produced to predict the excluded dyad's likelihood of border settlement. We repeated this exercise until we had out-of-sample predictions for each dyad in the dataset for each of these non-spatial models (estimated separately). We then repeated this entire process with the full versions of Models 2, 3, and 4 (estimated separately) as well. Based on the predicted probabilities that result from this analysis, we conclude that the diffusion models substantially outperform the base models in terms of prediction, particularly when it comes to predicting the outcome of interest – that is, border settlement (a value of 1 on the dependent variable), rather than no settlement (a value of 0 on the dependent variable).

Two broad findings support our general conclusion. First and foremost, we analyze out-of sample fit via Brier scores (i.e., the mean squared difference between the predicted probability and the observed outcome). In each case, the diffusion models generate lower Brier scores (0.0273, 0.0296, and 0.0249 for Models 2, 3, and 4 respectively) than the base models (0.0277, 0.0299, and 0.0263, respectively). This suggests that the diffusion models produce more accurate out-of-sample predictions than the base models.

Second, beyond this general finding, we also wanted to know whether the diffusion models performed better *specifically when predicting border settlement* (a value of 1 on the dependent variable), as opposed to no settlement (a value of 0 on the dependent variable). This is a particularly important consideration here because, in our analysis, a dyad will only experience one year of border settlement before exiting the dataset (see research design), but many years of "no border settlement." It is therefore very easy to predict "no border settlement" (this is, after all, the clear modal value of the dependent variable), but much harder to predict border settlement.

The analysis suggests that our diffusion variables significantly increase our ability to predict border settlement. Overall, there appears to be no large difference in the out-of-sample predicted probabilities for those dyad-years in which *no* border settlement occurred (a value of 0 on the dependent variable); indeed, for these dyad-years, the mean out-of-sample prediction of no border settlement for all models, spatial and non-spatial alike, is equal to about 0.03. This is not surprising, since (as mentioned above), it is relatively easy to predict no border settlement; the lack of border settlement occurs in most dyad-years in our dataset. In sharp contrast, for dyad-years in which border settlement occurred (a value of 1 on our dependent variable), the diffusion models produced better average out-of sample predicted probabilities of border settlement (0.131 for Model 2; 0.144 for Model 3; 0.228 for Model 4) than the base models (0.106 for Model 2; 0.115 for Model 3; 0.189 for Model 4). Because we know that border settlement occurred in these years, higher predicted probabilities suggest a model's ability to predict border settlement more accurately in out-of-sample dyads. Indeed, the diffusion variables increase the (correct) prediction of border settlement in such dyad-years by more than 20% in all three cases. This indicates quite clearly that our diffusion variables contribute significantly to the modeling of border settlement.

Overall, we take the cumulative weight of these efforts as evidence that our diffusion models not only fit the data better than the base models (log-likelihoods discussed above), but that diffusion models also improve our ability to predict when border settlements are likely to take place (Brier scores and predicted probabilities discussed above).

Part B9: Concessions & Settlement.

We also considered the possibility that our findings may be explained by states that were highly motivated to settle all of their borders at around the same time. In that case, states would be expected to yield major concessions to their bargaining partners in an attempt to motivate rapid settlement. To control for this possibility, we used the Huth and Allee (2002) settlement attempt data to track whether either state in the dyad made major concessions to the other side in their negotiations. These data exist for the time period 1919-1995, but only for cases in which a state has officially stated a territorial claim against another government. As such, these data severely reduce our number of observations. Nevertheless, the findings are informative. First, in Model 1 (Table B10 below), we use two dummy variables to include the information from the Huth and Allee dataset and add them to our model of border settlement (Model 4 from the manuscript results). One of the dummy variables takes on a value of 1 if a territorial claim exists between dyad members in a given year, but no major concession was made. The second dummy variable takes on a value of 1 if a territorial claim exists between dyad members in that year and a major concession was made by one (or both) of the states. As our results show, the presence of a claim with no concession may reduce the probability of border settlement, but a major concession appears to have no significant effect on the likelihood of settlement. In this model, our main independent variable remains significant and positive; as such, it does not appear that concessions explain away the effect of diffusion discussed in our manuscript.

However, to further allay concerns that states that have recently settled one border are more likely to make concessions in the settlement of another, we also estimated two models (Models 2 and 3, Table B10) that use our diffusion model to predict the likelihood of making a major concession in the Huth and Allee dataset (which includes only territorial/legal claim years). As shown below, there is not strong evidence that recent settlements motivate concessions; Model 3 suggests that dyads that have a greater proportion of their borders settled and are further removed from those settlements in time appear to be slightly more likely to make major concessions, albeit not significantly so in most years. This is demonstrated in Figure B6 below, which displays the marginal effect of the proportion of relevant borders settled over the time since the last relevant settlement. As such, we find little reason to suspect that over-willingness to settle, represented by major concessions, is responsible for our findings.

Figure B6: Marginal Effect of the Proportion of Relevant Borders Settled (Main Diffusion Variable) on the Probability of Major Concessions in a Dyad's Territorial Claims (95% Confidence Interval)

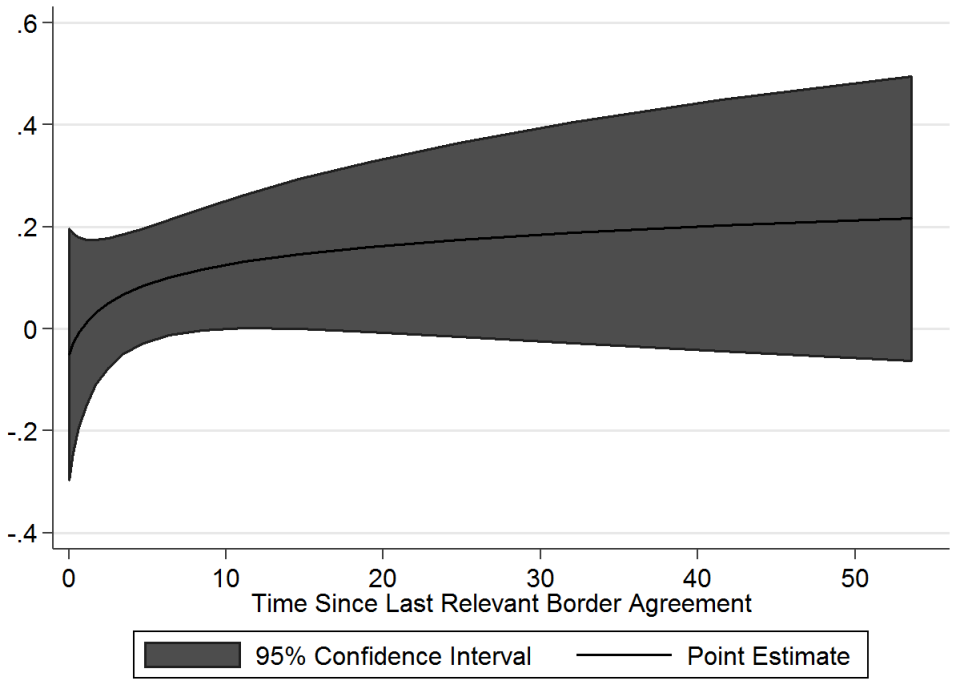


Table B10. Logistic Regression Predicting Border Settlement, 1816-2001.

	(1) DV: Settlement	(2) DV: Major Concession	(3) DV: Major Concession
Proportion of relevant borders settled	2.301***	0.755	-0.469
	(0.589)	(0.646)	(1.119)
Years since relevant settlement	-0.0611	-0.172	
	(0.0620)	(0.119)	
Years since relevant settlement^2	0.000919	0.0104	
	(0.00261)	(0.00766)	
Years since relevant settlement^3	8.07e-06	-0.000157	
	(2.64e-05)	(0.000124)	
ln(Years since relevant settlement)			-0.659
			(0.437)
Relevant Settlement Proportion X ln(Years)			0.800
			(0.490)
Claim, No Major Concession	-3.377***		
	(0.855)		
Claim, Major Concession	-0.800		
	(0.802)		
Third-party assistance	3.270***	0.778	0.676
	(0.714)	(0.562)	(0.583)
Bilateral negotiations (total)	0.972***	0.140	0.193
	(0.178)	(0.188)	(0.179)
Salience of current ICOW claim (ICOW)	-0.279***	-0.00981	-0.0211
	(0.0439)	(0.0598)	(0.0590)
Intrastate conflict	-1.038*	-0.454	-0.391
	(0.483)	(0.413)	(0.405)
Joint democracy	2.071***	-0.669	-0.501
	(0.564)	(0.682)	(0.703)
Relative capabilities (ln)	0.186*	0.0477	0.0653
	(0.0969)	(0.136)	(0.138)
Alliance	0.115	-0.0677	-0.111
	(0.344)	(0.416)	(0.416)
Rivalry (dyad)	-1.083**	-0.254	-0.320
	(0.453)	(0.479)	(0.466)
Years since leadership change	-0.0523	-0.0771	-0.0735
	(0.0424)	(0.0525)	(0.0519)
Total rivals of dyad members	0.295*	0.154	0.194
	(0.128)	(0.137)	(0.145)
Post WWI	0.848	0.547	0.484
	(0.662)	(0.520)	(0.527)
Post WWII	0.420	0.873	0.957
	(0.603)	(1.110)	(1.125)
Dyad age	-0.0828*	-0.0184	-0.0256
	(0.0375)	(0.0432)	(0.0458)
Dyad age^2	0.000760	-9.41e-05	3.38e-05
	(0.000652)	(0.000767)	(0.000787)
Dyad age^3	-2.81e-06	1.44e-06	7.15e-07

	(3.13e-06)	(3.58e-06)	(3.61e-06)
Constant	-2.437***	-1.602*	-0.923
	(0.689)	(0.882)	(1.002)
Observations	1,743	462	462

Robust standard errors in parentheses. One tailed tests *** p<0.001, ** p<0.01, * p<0.05

Part B10: Fixed & Random Effects

In this section, we aim to ensure that our findings are robust to excluded panel-level factors and that a change in our diffusion variables actually yields changes within dyads rather than simply capturing differences between dyads. As a result, we have run several robustness tests to ensure that our findings hold up when controlling for excluded panel-level factors.

We obviously would like to straight-forwardly implement a dyad fixed-effects model. That, however, is quite difficult in a discrete-time event history model like ours, in which each dyad experiences only one event – i.e., the dependent variable only takes on a value of 1 in one observation – and we have variables (i.e., time counters measuring the age of the dyad) that both are monotonically increasing and essentially serve as smoothed fixed-effects for time. Attempting to add fixed effects for time to such a model is impossible, as it practically limits us to making predictions on the basis of single observations. That said, we can estimate such a model if we exclude our variables measuring dyad age, as all other variables are non-constant within panels.[10] The results of that regression are shown in Model 1 in Table B11 below.

A few things are worth noting about the results found in Model 1. First, our main independent variable (i.e., the proportion of relevant borders settled) remains positive and statistically significant, suggesting that changes in its value yield significant changes in the probability of border settlement within dyad panels. Second, although the values and significance of our measures of time since a relevant agreement are slightly different than found in the manuscript version, that is to be expected, as these variables are now picking up some of the variance associated with the dyad's age – particularly in the early years of a dyad's existence prior to the settlement of a relevant border. Third, and finally, our number of observations is reduced as we lose some dyads that either (1) enter the dataset with settled borders, (2) settle their shared border in their first year of existence, or (3) possess unsettled borders in the last observed year. This occurs in each case because there is no variance in the dependent variable to be explained within the panel.

Although the fixed-effects regression generally supports our findings, we do not believe it is the best way of thinking about the effect of diffusion on border settlement. While we are absolutely interested in the intra-panel effects of the settlement of relevant borders on the probability of border settlement, we would also like to leverage between-panel effects to understand the importance of diffusion better. That is, we do not only expect that a dyad is more likely to settle its border after its members have settled other borders; we also expect that dyad to be more likely to settle its border than other dyads, all else being equal.

In order to test the robustness of our findings to a model that accounts for both "within" and "between" dyad effects, we use a random effects model, which provides us with estimates that account for both of these sources of variance. Unlike in the previous fixed-effects modeling exercise (Model 1), in this model, we can now include the dyad age variables that exist in our preferred model specification. The results of the random effects estimation can be seen in Model 2 in Table B11 below.

Once again, the results of the random effects model provide strong support for our argument. The coefficient on the proportion of relevant borders settled is positive and significant, as in previous models. While the coefficients on the time variables are not statistically significant, Figure B7 (below) shows that the theorized effect of time on the effect of relevant border settlement still appears to work as we theorize. Using the same data that was used to generate Figure 1 in the main manuscript, Figure B7 (below) shows the predicted probability that non-rival, non-allied dyad A-B (the remainder of whose attributes are set to their respective means and modes), reaches a border agreement both before and after state A settles its

[10] It should be noted, however, that the (insignificant) estimates for bilateral negotiations, joint democracy, and the post World-War I period are all incredibly large. It is likely that this occurs because (1) the total number of bilateral negotiations is also non-monotonically increasing with time (albeit at more irregular intervals than time itself), and (2) joint democracy and post-World War I are constant within many panels.

mutual border with state C in year 13. For comparison, Figure B7 also includes the predicted probability that A and B reach an agreement if A and C *never* settle their border.

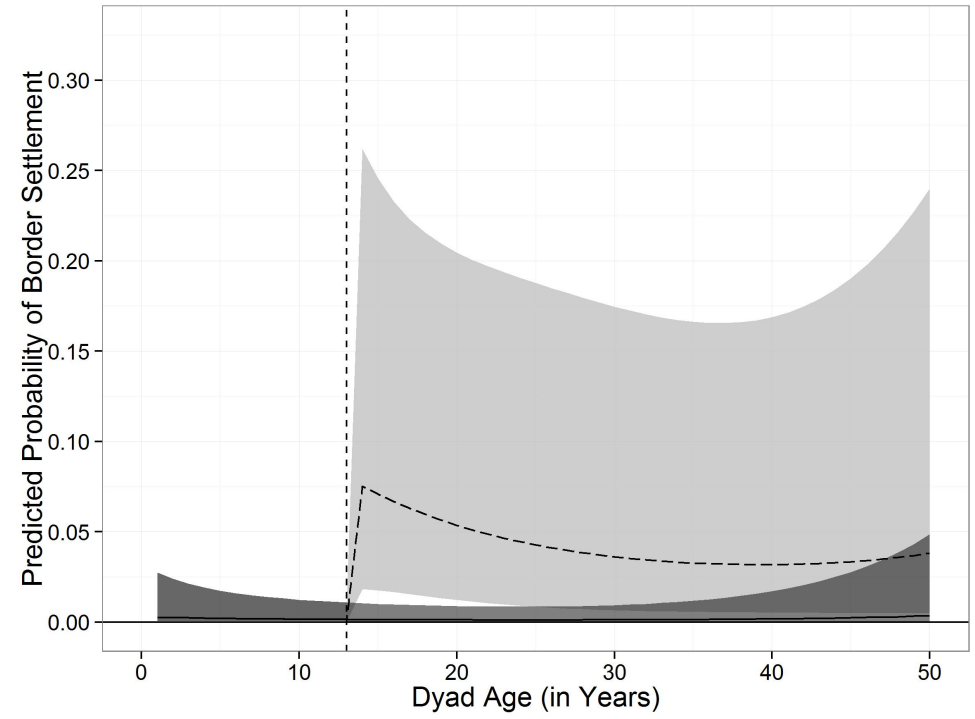
Although the random effects model significantly increases the size of the confidence intervals surrounding the predicted probability of settlement after a relevant settlement, the predicted probability that A and B reach a border agreement following an agreement between states A and C is still expected to be significantly greater than it would have been in the absence of such an agreement. This significant difference lasts for 11 years after the agreement in this model, i.e., from year 14 through year 24, after which time the probability of settlement after the relevant border agreement is indistinguishable from the probability for border settlement that is predicted to exist in the absence of a relevant agreement. Cumulatively, such findings support our theoretical argument, its hypotheses, and the main results presented in the text. We therefore conclude that our results are fairly robust to the inclusion of both fixed and random effects.

Table B11. Logistic Regression Predicting Border Settlement, 1816-2001.

	(1) Fixed Effects	(2) Random Effects
Proportion of relevant borders settled	20.09**	3.303**
	(7.483)	(1.069)
Salience of current ICOW claim (ICOW)	-0.881**	-0.617***
	(0.365)	(0.102)
Years since relevant settlement	1.527**	-0.0728
	(0.494)	(0.0797)
Years since relevant settlement^2	-0.123*	0.00125
	(0.0552)	(0.00337)
Years since relevant settlement^3	0.00352*	6.89e-06
	(0.00161)	(3.49e-05)
Third-party assistance	1.784	2.514***
	(1.101)	(0.658)
Bilateral negotiations (total)	316.0	1.721***
	(1,635)	(0.368)
Intrastate conflict	-0.988	-0.596
	(1.104)	(0.550)
Joint democracy	261.0	2.629*
	(37,181)	(1.165)
Relative capabilities (ln)	3.743*	0.777**
	(2.058)	(0.285)
Alliance	1.205	-0.248
	(3.086)	(0.610)
Rivalry (dyad)	0.695	-1.359*
	(1.747)	(0.776)
Years since leadership change	0.0100	0.0258
	(0.156)	(0.0480)
Total rivals of dyad members	0.627	0.0379
	(0.960)	(0.219)
Post WWI	-123.6	0.474
	(30,064)	(0.717)
Post WWII	5.875	1.082
	(4.634)	(0.879)
Dyad age		0.0101
		(0.0558)
Dyad age^2		-0.000152
		(0.000952)
Dyad age^3		-4.46e-07
		(4.47e-06)
Constant		2.565***
		(0.439)
Observations	1,785	2,746

Notes: Robust standard errors in parentheses. One tailed tests *** p<0.001, ** p<0.01, * p<0.05

Figure B7. Predicted Probability of Border Agreement between Hypothetical States A & B (95% Confidence Interval).



Part B11: Robustness to Alternative Time Specifications

In this section, we offer three alternative means of handling the effects of time – as a way to test the robustness of our results further. First, Box-Steffensmeier and Jones (2004) recommend interacting variables that violate the proportional hazard assumption with a logarithmic transformation of time. As such, it is interesting to determine whether our findings hold with this alternative specification. As shown in Model 1 in Table B12 below, this does indeed appear to be the case. Figure B8 below replicates Figure 1 from the manuscript on the basis of the logarithmic specification (Model 1, Table B12 below); the results appear to be largely similar to those shown in the manuscript.

Another method for handling time involves creating different types of cubic splines. We offer two such alternative models below. First, Model 2 in Table B12 below displays the results of a model that includes restricted cubic splines of both time counters used in our main results (Table 1, main text). Second, Model 3 displays the results of a generalized additive model with an automated smoothing cubic spline applied to our two time counters, as discussed in Chapters 4 and 6 of Keele (2008). Our results are robust to both of these specifications.

Figure B9 below illustrates the robustness of our results graphically. This figure replicates Figure 1 in the manuscript (main text), but using the results of Model 3 in the table below. As the figure shows, the results with respect to our diffusion mechanism are substantively similar to those presented in the main text. This conforms with Carter and Signorino's (2010) argument that our preferred cubic polynomial specification (presented in the main text) performs similarly to cubic splines and automated smoothing in most instances.

Table B12. Logistic Regression Predicting Border Settlement, 1816-2001.

	(1) Logarithmic Interaction	(2) Cubic Splines	(3) Generalized Additive Model
Proportion of relevant borders settled	1.709*	2.321***	1.844***
	(0.811)	(0.479)	(0.430)
Salience of current ICOW claim (ICOW)	-0.259***	-0.293***	-0.266***
	(0.0370)	(0.0430)	(0.035)
Years since relevant settlement (ln)	-0.100		
	(0.273)		
Prop. of. rel. brdrs. sttled.* Yrs. since rel. settle(ln)	-0.0619		
	(0.391)		
Dyad Age (ln)	-0.726***		
	(0.166)		
Third-party assistance	2.457***	2.758***	2.762***
	(0.487)	(0.575)	(0.455)
Bilateral negotiations (total)	0.663***	0.821***	0.808***
	(0.112)	(0.133)	(0.127)
Intrastate conflict	-0.570	-0.793*	-0.466
	(0.407)	(0.464)	(0.388)
Joint democracy	1.235*	1.885***	1.274*
	(0.601)	(0.539)	(0.552)
Relative capabilities (ln)	0.244**	0.343**	0.265**
	(0.0971)	(0.113)	(0.105)
Alliance	0.0194	0.111	0.0647
	(0.289)	(0.334)	(0.295)
Rivalry (dyad)	-0.726*	-1.289***	-0.769*
	(0.371)	(0.411)	(0.352)
Years since leadership change	-0.00775	-0.0203	-0.00854
	(0.0296)	(0.0343)	(0.0295)
Total rivals of dyad members	0.184*	0.286**	0.185*
	(0.100)	(0.0986)	(0.101)
Post WWI	0.315	0.887	0.406
	(0.531)	(0.580)	(0.483)
Post WWII	0.297	0.955*	0.154
	(0.561)	(0.543)	(0.638)
Spline (revset)		-0.0395*	
		(0.0228)	
$Spline^2$ (revset)		0.235	
		(0.146)	
$Spline^3$ (revset)		-0.445	
		(0.457)	
Spline (noset)		-0.0459**	
		(0.0168)	
$Spline^2$ (noset)		0.0668	
		(0.0704)	
$Spline^3$ (noset)		-0.171	
		(0.212)	
Dyad Age (Deviance Chi-Square)			25.424**
Years since relevant settlement (Deviance Chi-Square)			15.073***
Constant	-1.394*	-2.850***	-7.384*

	(0.728)	(0.560)	(4.031)
Observations	2,746	2,534	2,746

Notes: Robust standard errors in parentheses. One tailed tests *** p<0.001, ** p<0.01, * p<0.05.

Figure B8. Predicted Probability of Border Agreement between Hypothetical States A & B based on Model 1 (Table 12 above) – Interaction Between Natural Log of Time Since Border Agreement & Proportion of Relevant Borders Settled (95% Confidence Interval)

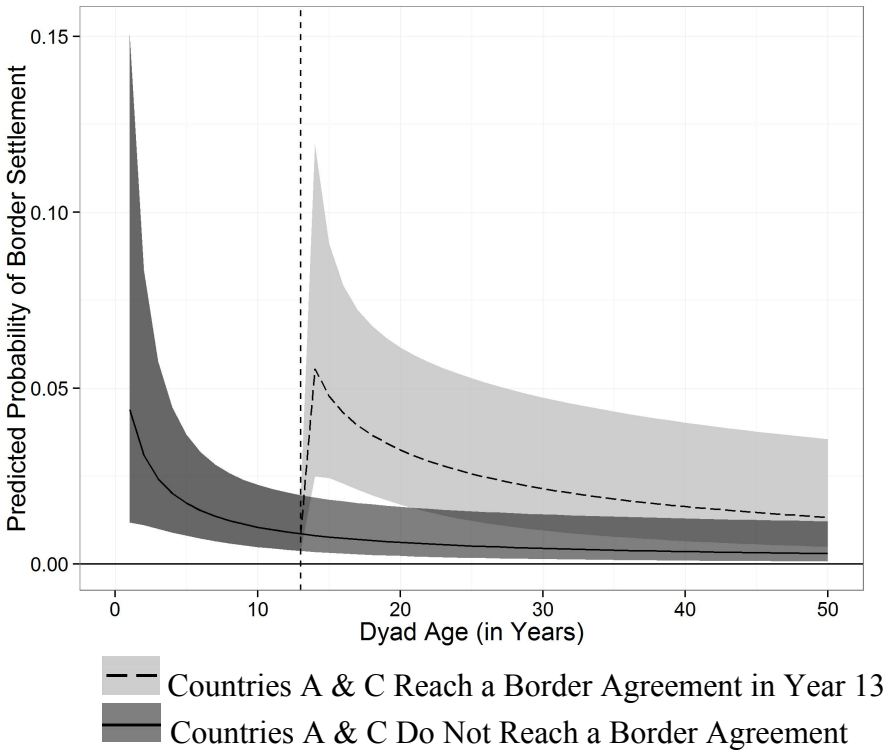
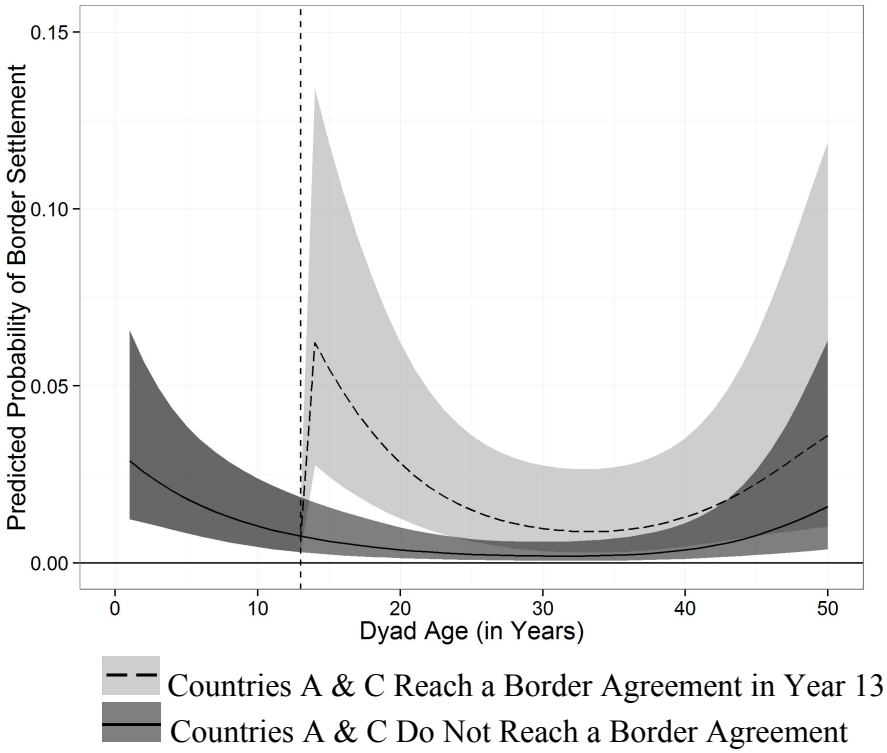


Figure B9. Predicted Probability of Border Agreement between Hypothetical States A & B based on Model 3 (Table 12 above) – Generalized Additive Model with Automated Smoothing Cubic Splines (95% Confidence Interval)

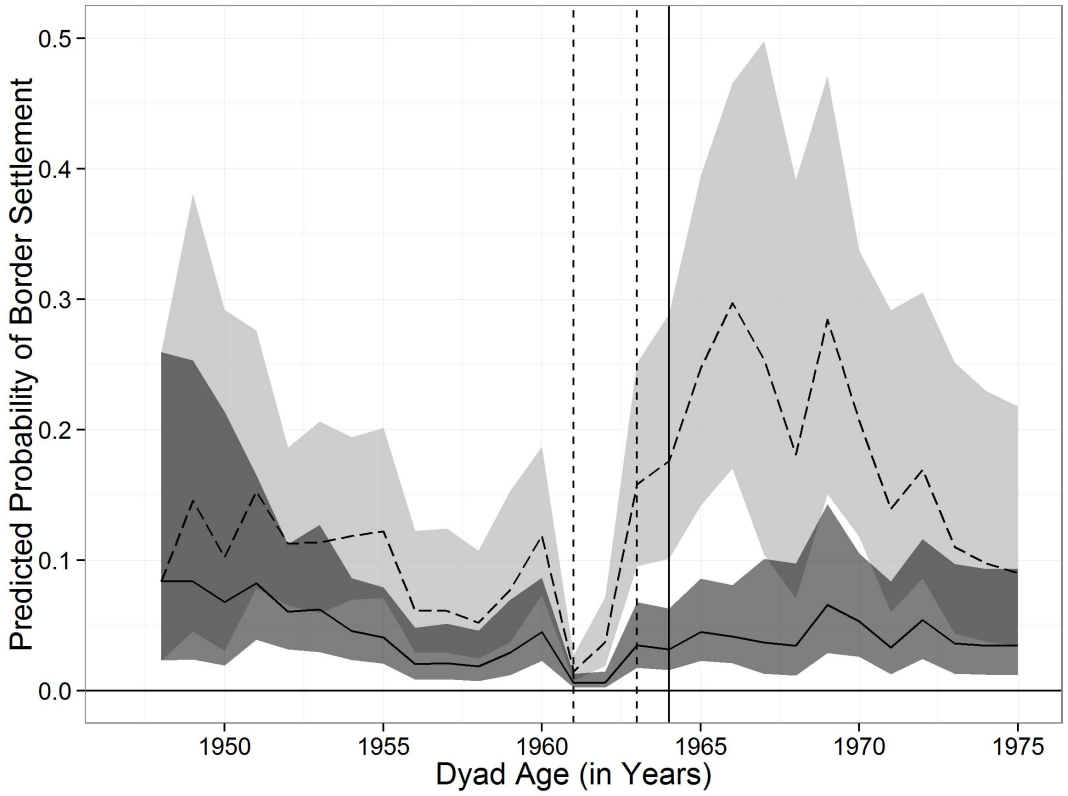


Part B12: Predicted Probability Graphs, China-Pakistan Border Settlement

In the manuscript and above, we use a hypothetical case for four reasons. First, we wish to speak generally about our results. Second, the use of an out-of-sample case allows us to avoid the potential criticism that we "cherry-picked" a case that matched our results – for it shows that our results hold for a dyad with the average characteristics of the dyads found in the international system. Third, this approach allows us to isolate the effect of our chief theoretical mechanism with a simple, easy to understand example – i.e., a state with only two neighbors who have no other contiguous neighbors themselves. Finally, this approach coincides with much published work that presents predicted probabilities based on specified (i.e., average or modal) values of the independent variables used in the analysis.

However, we also find similar results if we focus on the case of China discussed above in Part A1. Indeed, Figure B10 below supports this claim; based on Model 4 from the manuscript, the figure shows that, when we use in-sample values for Pakistan and China, we obtain results that are substantively similar to those discussed in association with Figure 1 in the manuscript. The dotted lines indicate the years after China's settlements with Burma (1960) and Mongolia (1962), which represent the beginning and expansion of an apparent "window of opportunity," which China and Pakistan took advantage of to sign an agreement near the end of 1963 (noted by the solid line in the figure).

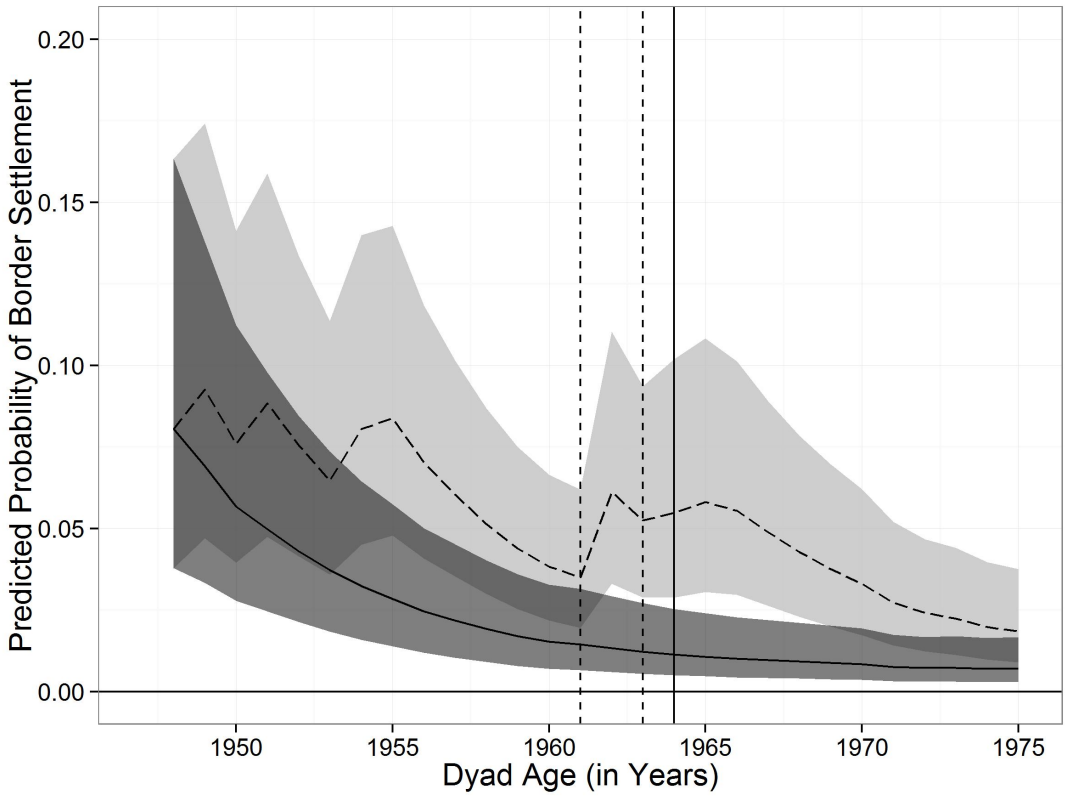
Figure B10. Predicted Probability of Border Agreement between China and Pakistan (In Sample; 95% Confidence Interval)



The graph in Figure B10 is fairly noisy, given the inclusion of several time-varying covariates and the constant introduction of new states into the system around this time period. As such, Figure B11 below shows the results of generating predicted probabilities for China and Pakistan when all values of the independent variables for the Chinese-Pakistan dyad are set to their means or modes and the number of

states bordering the dyad is set to its maximum. While this artificially lowers the overall predicted probability of settlement, the pattern discussed in Figure B10 above, as well as Figure 1 in the main manuscript, persists. We therefore conclude that the Chinese case confirms our theoretical predictions (as noted in the online appendix, Part A1) and the empirical findings presented in the general, out-of-sample figure that we include in the main text (Figure 1, main manuscript).

Figure B11. Predicted Probability of Border Agreement between China and Pakistan (Out of Sample; 95% Confidence Interval)



References

Banks, Arthur S., and Wilson, Kenneth A. (2012) Cross-National Time-Series Data Archive. Databanks International. Jerusalem, Israel.

Bennett, D. Scott, and Alan Stam. (2000) EUGene: A Conceptual Manual. *International Interactions* 26(2):179-204.

Box-Steffensmeier, Janet M., and Bradford S. Jones. (2004) *Event History Modeling*. Cambridge: Cambridge University Press.

Carter, David B., and Curtis S. Signorino. (2010) Back to the Future: Modeling Time Dependence in Binary Data. *Political Analysis* 18(3):271-292.

Chiozza, Giacomo, and H.E. Goemans. (2011) *Leaders and International Conflict.* Cambridge: Cambridge University Press.

Colaresi, Michael P., Karen Rasler, and William R. Thompson. (2007) *Strategic Rivalries in World Politics.* Cambridge: Cambridge University Press.

Correlates of War Project. (2008) State System Membership List, v2011. Online at: http://correlatesofwar.org.

Ghosn, Faten, Glenn Palmer, and Stuart Bremer. (2004) The MID3 Data Set, 1993-2001: Procedures, Coding Rules, and Description. *Conflict Management and Peace Science* 21(2):133-154.

Gleditsch, Nils Petter, Peter Wallensteen, Mikael Eriksson, Margareta Sollenberg, and Havard Strand. (2002) Armed Conflict 1946-2001: A New Dataset. *Journal of Peace Research* 39(5):615-637.

Greig, J. Michael. (2005) Stepping Into the Fray: When Do Mediators Mediate? *American Journal of Political Science* 49(2):249-266.

Grieg, J. Michael, and Patrick M. Regan. (2008) When Do They Say Yes? An Analysis of the Willingness to Offer and Accept Mediation in Civil Wars. *International Studies Quarterly* 52(4):759-781.

Hensel, Paul R. (2014) ICOW Colonial History Data Set, version 0.4. Available at: <http://www.icow.org/colhist.html.>

Hensel, Paul R., Sara McLaughlin Mitchell, Thomas E. Sowers, and Clayton L. Thyne. (2008) Bones of Contention: Comparing Territorial, Maritime, and River Issues. *Journal of Conflict Resolution* 52(1):117-143.

Huth, Paul K., and Todd L. Allee. (2002) *The Democratic Peace and Territorial Conflict in the Twentieth Century.* Cambridge: Cambridge University Press.

Huth, Paul K., Sarah E. Croco, and Benjamin J. Appel. (2013) Bringing Law to the Table: Legal Claims, Focal Points, and the Settlement of Territorial Disputes Since 1945. *American Journal of Political Science* 57(1):90-103.

Keele, Luke. (2008) *Semiparametric Regression for the Social Sciences*. West Sussex: Wiley.

Leeds, Brett Ashley, Jeffrey M. Ritter, Sara McLaughlin Mitchell, and Andrew G. Long. (2002) Alliance Treaty Obligations and Provisions, 1815-1944. *International Interactions* 28(3):237-260.

Marshall, Monty G., and Keith Jaggers. (2013) Political Regime Characteristics and Transitions, 1800-2012. Polity IV Project. Available at: http://www.systemicpeace.org/polity/polity4.htm.

Owsiak, Andrew P. (2012) Signing Up for Peace: International Boundary Agreements, Democracy, and Militarized Interstate Conflict. *International Studies Quarterly* 56(1):51-66.

Singer, J. David, Stuart Bremer, and John Stuckey. (1972) Capability, Distribution, Uncertainty, and Major Power War, 1820-1965. In *Peace, War, and Numbers,* edited by Bruce Russett. Beverly Hills: Sage.

Stinnett, Douglas M., Jaroslav Tir, Philip Schafer, Paul F. Diehl, and Charles Gochman. (2002) The Correlates of War Project Direct Contiguity Data, Version 3. *Conflict Management and Peace Science* 19(2):58-66.