Appendix A. (Additional) Conceptual and Operational Considerations.

Part A.1. Critique of Existing Measures of the Border Settlement Concept.

For most scholars, "border settlement" theoretically exists when neighboring states agree upon (i.e., *de jure* settlement under international law) and accept (i.e., *de facto* settlement) their respective sovereign jurisdictions.[1] For example, Vasquez (2009) argues that territoriality – i.e., the human tendency to divide the world into distinct units and then defend these units with force – drives much of interstate conflict. He therefore predicts that actors will divide the world into distinct units (i.e., states), that the resultant states will care greatly about their boundaries, that these states will (violently or non-violently) contest the placement of these boundaries, and that violent conflict will subside after states delimit their interstate borders (*de* jure settlement).[2] Vasquez 2009:153-166). Similarly, Gibler's (2012:117) territorial peace proposition rests on dyad members' mutual acceptance of their borders' delimitation, as does Simmons's (2002:832; 2005:827) conceptualization of interstate borders as institutions.

The critical question therefore becomes: what defines the agreement and acceptance of interstate border delimitation? Paradoxically, most scholars answer this not with what defines this agreement or acceptance of borders, but rather what constitutes their *rejection* – primarily because they propose that "mutual acceptance is difficult to identify *ex ante*" (Gibler 2012:117). Simmons (2005), for example, relies on territorial claim data from Huth (1996) to determine which borders are not agreed upon and accepted. As we show below, however, claims and settlement are not identical concepts; a claim may not exist where borders are unsettled (e.g., Kenya-Sudan), just as claims might arise after settlement occurs (e.g., Ecuador-Peru). Vasquez (2009) follows a similar tack, employing data on militarized disputes that occur over territorial issues to identify dyads that do not agree upon or accept the territorial status quo. Yet the use of force is only one of many tools that states can use to handle their disagreements (Hensel, Mitchell, Sowers, and Thyne 2008) – a tool that does not necessarily imply agreement upon, acceptance, or rejection of borders.

Gibler (2007, 2012) perhaps comes closest to capturing acceptance, as opposed to rejection, of interstate borders. He opts, however, for an indirect operationalization (i.e., proxy variable; Rasler and Thompson 2011: 284-285). Because acceptance (*de facto* settlement) cannot be captured easily via observational data, he thinks about border acceptance via focal points.[3] Consequently, he identifies factors that might facilitate such focal points – e.g., geographic features like mountains (Gibler 2007) or differences in colonial masters (Gibler 2007, 2012) – as well as those that might alter existing focal points – e.g., relative capabilities of dyad members, the age of borders, militarized conflict, civil war, and territorial transfers (Gibler 2012: 117-123). Two difficulties arise with this indirect approach, however. First, focal points might identify

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[1] We focus on *de jure* settlement in our data (i.e., agreement on delimitation), since *de facto* settlement (i.e., societal acceptance of delimitation) cannot be observed directly (see Gibler 2012).

[2] Delimitation places a boundary on a map; demarcation subsequently marks a delimited border physically on the ground (Prescott and Triggs 2008). See Appendix A.4.

[3] Gibler (2007, 2012) frequently uses the term "border stability," but also repeatedly mentions "settlement." For example, he argues that "As a result of settling their borders, neighbors should experience greater changes of both having a peaceful relationship and becoming democratic" (Gibler 2012:114). This summarizes his territorial peace argument, and we therefore conclude that he is interested in settlement, but operationalizes settlement via stability.

delimitation terms that states are more likely to use than others, but not whether states *agree upon* those focal points for their delimitation. In other words, focal points (perhaps) raise the likelihood of *de jure* or *de facto* settlement or might predict the content of settlement agreements, but do not indicate whether *de jure* settlement itself occurs. Second, many factors that could alter focal points might *not* alter settlement terms, especially after settlement occurs.[4] Vasquez (2009:161) captures this sentiment best when he argues that "changes in capability become dangerous only when there are existing territorial disputes…." In other words, if capabilities shift post-settlement, there may be little danger. Likewise, territorial transfers, civil wars, and border ages will be more or less threatening depending on whether border settlement has (not) occurred. This suggests that the factors Gibler believes can alter focal points may play a role only under certain conditions – namely, before border settlement occurs.

We believe that the threat that underlies, *inter alia*, Gibler (2007, 2012), Simmons (2002, 2005), and Vasquez (2009) depends upon *de jure* unsettled borders. Furthermore, and contrary to Gibler (2012), we propose that the mutual agreement upon borders – or *de jure* border settlement – can be directly identified and observed via interstate agreements. It is this type of mutual agreement that scholars seek. Indeed, Gibler and Tir (2010: 954) use peaceful territorial transfers to identify such agreement. We therefore expand upon their important conceptualization to capture a method of agreement common to all dyads in the world – agreement upon the delimitation of mutual borders through interstate boundary agreements.

In the end, we believe that our data more directly captures what scholars mean by "settled borders" – at least the component concerning agreement over the placement of interstate borders. It also offers a measure of (latent) territorial threat that exists independently of claim or dispute behavior (see Appendix D), thereby allowing scholars to study the context in which claims or disputes occur, and contributes data to research on international conflict/cooperation, territorial conflict, conflict management, and the effectiveness of international law.

Part A.2. Methods (Conflict Management Strategies) of Border Settlement
There are eight common methods used during the border settlement process. These include:
- *Negotiation:* state officials meet and work toward delimitation – without third-party assistance (e.g., United Arab Emirates-Oman).
- *Mediation:* state officials meet *with* a third party who facilitates the meeting, controls communication, and/or suggests non-binding substantive terms to the states (e.g., India-Pakistan).
- *Arbitration:* officials submit their dispute to a third-party of their choosing (usually not a standing court), which subsequently issues a ruling about the border's delimitation (e.g., Colombia-Venezuela).
- *Adjudication:* follows a process similar to arbitration, but uses an international court (e.g., the International Court of Justice) to hear the dispute and issue a ruling (e.g., El Salvador-Honduras).
- *Post-war conference:* convenes after a war to establish the post-war order, including (potentially) the (re)delimitation of interstate borders (e.g., Czechoslovakia).
- *Plebiscite:* asks the public to vote on the state within whose sovereign jurisdiction they prefer to reside (e.g., Ghana-Togo).

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[4] In fact, a settlement agreement itself constitutes a focal point (e.g., see Colombia-Venezuela).

- *Internal (or administrative) decrees:* when colonial powers decide boundaries within their colonial possessions (e.g., Spain in Latin America).
- *Force:* disputing states or a third party employ the military to achieve their preferred border delimitation (e.g., Bolivia-Paraguay).

Part A.3. Border Agreements under International Law

Critics may argue that *de jure* border settlement carries no sense of finality. Theoretically, these critics rely upon the fact that treaties can be abrogated under international law according to the principle of *rebus sic stantibus.* Such a position can certainly be derived from the "strictest interpretation" of *rebus sic stantibus*, but this interpretation is "the most widely used and hotly contested" of the various "grounds for terminating treaties and agreements prior to their originally agreed-upon expiration date" (Kegley and Raymond 1990:89-90). A more moderate interpretation derives from the work of Lissitzyn (1967), who proposes that states can only abrogate treaty obligations if they can demonstrate that certain knowledge they lacked at the time of signing an agreement would have altered their intentions while crafting that agreement – a very high bar.

Given such a high standard for reneging, it seems that the widely accepted, alternative legal principle of *pacta sunt servanda* applies more often to border treaties than *rebus sic stantibus* (Guzman 2008). Three additional considerations further support this position. First, scholars argue that *de jure* border settlement (via border treaties) cannot be "undone" under international law (see, e.g., Cukwurah 1967; Kocs 1995). Second, states recognize this level of finality and seemingly prefer temporary agreements (e.g., *modus vivendi*) to final ones when they are not ready to delimit borders with finality (e.g., see Ireland 1938 on Latin America). Finally, we find only one case of a dyad specifically abrogating a border treaty (Ecuador-Peru). All of this suggests that leaders cannot abrogate their border treaties at any time and that they recognize this limitation on their behavior.

Beyond this, we note that the signing of border treaties is a behavior – one that we think constitutes a watershed moment in a dyadic relationship (Gibler 2012; Kocs 1995; Owsiak 2012, 2013; Simmons 2002, 2005; Vasquez 2009). Yet one cannot study the effects of such agreements – especially on interstate conflict/cooperative behavior – if conflict itself (or its lack) defines the period of (non)agreement. We therefore elect to follow international legal theory and imbue our coding rules with a sense of (legal) finality. If we are incorrect – i.e., these agreements are frivolous under international law – then we should find evidence that border agreements do *not* significantly alter interstate relations. Existing empirical evidence, however, suggests that we are correct (Owsiak 2012; Owsiak and Rider 2013), and anecdotes from our data on the border settlement process repeatedly show that states view border delimitation as final (see also Cukwurah 1967).

Part A.4. Delimitation versus Demarcation.
We code border settlement according to the practice of delimitation (i.e., drawing a border on a map), as opposed to demarcation (i.e., drawing a border on the ground) for two reasons. First, delimitation appears to be more contentious than demarcation. From our research, states seem to worry most about delimitation; once delimitation occurs, demarcation often follows more easily. Second, states sign explicit delimitation agreements, but do not necessarily sign separate demarcation treaties (e.g., noting when demarcation finishes). It is therefore extremely challenging (and sometimes impossible) to obtain border demarcation data (for a similar decision to ours, see also Huth and Allee 2002).

Appendix B. A Narrative of the Ethiopia-Somalia Border Settlement Process.

The Ethiopia-Somalia Border: This border results from a series of agreements between Italy and the United Kingdom – on the Eastern/Southern and Northern/Western Somali side respectively – and Ethiopia.

As Italy defined its sphere of influence in the Horn of Africa, it fought the Kingdom of Ethiopia militarily – particularly in 1887 (at Dogali) and 1889. Italy and Ethiopia subsequently negotiated and signed the Treaty of Wichale on 2 May 1889, which ensured Ethiopian independence from Italy. Nonetheless, Italy considered Ethiopia to be an Italian protectorate and therefore negotiated a border delimitation treaty on its behalf with the United Kingdom in 1894. Because of disagreement over the status of Ethiopia, Italy and Ethiopia then fought militarily from 1894-1896. Fighting ended with the Addis Ababa Treaty of Peace and Friendship on 26 October 1896. This treaty noted the need to delimit a boundary between Italy and Ethiopia, and the two attempted this in 1897 (28 March, 24 June, and 3 September). It is unclear, however, whether delimitation details (including maps) ever were finalized.

On 14 May 1897, Ethiopia established its boundary with British Somaliland. A joint British-Ethiopian boundary commission subsequently demarcated this border in 1932-1935, with a final demarcation agreement signed on 28 March 1935. There appears to be little difficulty over the delimitation of this border after 1897.

Trouble persisted, however, on the Italian side. Although the Treaty of Wichale (1896) advocated that border delimitation be completed within one year, the parties did not revisit the matter until 1908, at which point they signed a convention that created a joint border demarcation commission (16 May). The commission started its work in 1910, but halted in 1911 due to differing interpretations of the 1908 agreement. Despite these difficulties, the Italians were able to negotiate the demarcation of a boundary between its Somali territory and that belonging to the British in 1929-1930. This demarcation set a tri-point along the Ethiopian border.

Italy invades Ethiopia in 1935 and British Somaliland in 1940. The United Kingdom retakes the Horn of Africa in 1941. In 1944, Britain reached an agreement with Ethiopia that restored the Ethiopian monarch, but allowed Britain to retain responsibility for administering Ethiopian territory. The United Kingdom then tried to unify Somalia (including the Ogaden) in 1948; this, however, failed, as it was opposed by the United Nations and Ethiopia. Despite this setback, the British withdrew from Ogaden in 1948 and reached a provisional boundary delimitation with Ethiopia. On 1 March 1950, the British issued a letter to the United Nations Trusteeship Council in which it unilaterally delimited a provisional boundary between Italian Somaliland and Ethiopia; Italy and Ethiopia both expressed reservations about this provisional boundary. Britain then handed responsibility for trusteeship of Italian Somaliland to Italy. It also subsequently completed an agreement (on 29 November 1954) to hand sovereign jurisdiction of the Ogaden back to Ethiopia beginning on 28 February 1955.

Italy and Ethiopia began negotiating again in 1955 – this time agreeing that the 1908 agreement should serve as the criteria for their border's delimitation. In 1957, they then reported to the United Nations that direct negotiations were no longer possible between them, as they disagreed about how to interpret their prior agreements. Somalia therefore inherited unclear borders with Ethiopia at independence in 1960, which led to a series of militarized disputes in 1960, 1961, 1963-1965, and 1967.

In 1967, Ethiopia and Somalia agreed in principal to a joint border commission, but this commission never formed. The two sides fought militarily again in 1973-1976. Cuba subsequently tried to mediate the dispute (1977) and then joined Ethiopian forces against Somalia in 1977-1978 (the Ogaden War). In 1979-1981, Ethiopia and Somalia again fought militarily. Ethiopia and Kenya issued a joint statement about the border that supported the Ethiopian position in December 1980. The Organization of African Union's (OAU) good offices commission (formed in 1973) met to address the dispute on 18-20 August 1980. After its Heads of State and Government meeting in June 1981, the OAU also issued an assembly resolution that favored Ethiopia's claim.

Somalia reported Ethiopian incursions into its sovereign jurisdiction throughout 1982-1983, and the two parties fought militarily between 1980-1985. The Arab League registered its support for Somalia at its summit meeting in September 1982. In January 1986, Italian mediation succeeded in bringing Ethiopia and Somalia together for direct negotiations, at which time they created a joint committee to improve relations. The committee subsequently met in 1986 (7-9 May and August) and 1987 (1-3 April). The parties fought again militarily in February 1987 and 1989.

The border remains not fully delimited.

Sources: Biger (1995:214-215); Brownlie (1979:826-851); Day (1987:126-132); Ghosn, Palmer, and Bremer (2004); Sarkees and Wayman (2010); United States Department of State (1978)

Appendix C. Colonial and Third-Party Involvement in Border Settlement Processes.

Table C.1. Identification and Frequency of Colonial and Third-Party Involvement.

Involvement as:	Colonial State		Third-Party Actor	
	Frequency*	% of Attempts Involved in (col)*	Frequency*	% of Attempts Involved in (col)*
Argentina	-	-	7	2.49%
Armenia	-	-	1	0.36%
Australia	-	-	1	0.36%
Austria-Hungary	-	-	28	9.96%
Belgium	15	2.61%	1	0.36%
Bolivia	-	-	1	0.36%
Brazil	-	-	6	2.14%
Bulgaria	-	-	8	2.85%
Chile	-	-	8	2.85%
China	-	-	1	0.36%
Colombia	-	-	1	0.36%
Costa Rica	-	-	3	1.07%
Cuba	-	-	2	0.71%
El Salvador	-	-	1	0.36%
France	293	50.96%	109	38.79%
Germany	62	10.78%	38	13.52%
Greece	-	-	1	0.36%
Italy	28	4.87%	74	26.33%
Japan	6	1.04%	66	23.49%
Kenya	-	-	1	0.36%
Mexico	-	-	1	0.36%
Mongolia	-	-	1	0.36%
Netherlands	14	2.43%	1	0.36%
Pakistan	-	-	1	0.36%
Peru	-	-	4	1.42%
Poland	-	-	1	0.36%
Portugal	67	11.65%	15	5.34%
Russia	6	1.04%	59	21.00%
Saudi Arabia	-	-	1	0.36%
Spain	32	5.57%	15	5.34%
Sweden	-	-	16	5.69%
Switzerland	-	-	2	0.71%
Turkey	-	-	1	0.36%
United Kingdom	292	50.78%	151	53.74%
United States	1	0.17%	95	33.81%
Uruguay	-	-	3	1.07%
Vatican	-	-	2	0.71%
Yugoslavia/Serbia	-	-	3	1.07%
African Union/Organization of African Unity	-	-	4	1.42%
International Court of Justice	-	-	12	4.27%
League of Arab States	-	-	1	0.36%
Organization of American States	-	-	2	0.71%
United Nations/League of Nations	-	-	20	7.12%
Total Unique Attempts	575		281	

Notes: *Because attempts can include more than one actor, frequencies do not add to total and percentages do not add to 100% within columns.

Appendix D. Comparisons between IBAD and Existing, Related Datasets

Part D.1. A Comparison to Territorial Claims Data (ICOW)

    De jure border settlement relates conceptually to territorial claims. Neighboring states often hold conflicting claims to sovereignty over the same border territory when borders remain unsettled. And, as these neighboring states sign international agreements that delimit the entirety of their mutual borders (i.e., settle their borders), they *should* also renounce any conflicting claims. It is therefore natural to ask whether territorial claims and border settlement are simply two sides of the same coin.

    To address this question, we compare our data to the Issue Correlates of War (ICOW) Project's data on territorial claims. ICOW considers a territorial claim to exist if the official representatives of a state "make explicit statements claiming sovereignty over a specific piece of territory that is claimed or administered by another state" (Hensel et al. 2008:128). For the comparison that follows, we use (provisional) version 1.01 of the ICOW data, which tracks all territorial claims in the world during the period 1816-2001 (Frederick, Hensel, and Macaulay 2015). These ICOW data omit claims over river usage and maritime space; nonetheless, this restriction aligns the ICOW data well with our border settlement data, which focus on the delimitation of sovereign jurisdictions on land (i.e., delimiting international land borders). Because border settlement can theoretically occur only within contiguous dyads (see above), the comparison that follows looks specifically at claims in land contiguous dyads.

Table D.1. Bivariate Relationship: Border Settlement and Territorial Claims.

| | Borders Settled | | | | | | |
| | No | | Yes | | Total | |
Territorial Claim	Frequency	% Dyad-Years with/without Claim (col)	Frequency	% Dyad-Years with/without Claim (col)	Frequency	% Dyad-Years with/without Claim (col)
No	918	23.83%	11,144	82.27%	12,062	69.33%
Yes	2,934	76.17%	2,401	17.73%	5,335	30.67%
Total	3,852		13,545		17,397	
X^2 (*p*-value)	4,800 (0.00)					
Υ (adj. stand. error)	-0.87 (0.01)					

    Table D.1 offers a first glimpse at the bivariate relationship between border settlement and territorial claims – by examining contiguous dyad-years during the period 1816-2001. The table indicates that territorial claims exist more often when borders are unsettled. Of the contiguous dyad years with unsettled borders, 76.17% (or 2,934 of 3,852) contain a territorial claim. In contrast, of the contiguous dyad-years with settled borders, only 17.73% (or 2,401 of 13,545) contain a territorial claim. This relationship is statistically significant (χ^2=4,800; *p*<0.00) and strongly negative (Υ=-0.87, a.s.e.=0.01).

    Such findings demonstrate that border settlement and territorial claims seem statistically related. Yet Table D.1 also underscores that claims and settlement are not synonymous. Of the contiguous dyad-years with unsettled borders, a sizeable percentage (23.83%) also contains no territorial claim. And, of the contiguous dyad-years with settled borders, a noteworthy number

(17.73%) also have a territorial claim. Neither of these two findings should appear if claims and settlement capture the same thing.

Before continuing, it is worth noting that we would expect the border settlement and territorial claims data to contain overlap, as well as significant differences. These differences derive from distinct conceptualizations. A territorial claim requires a state leader to make an explicit demand for sovereignty over a particular territory administered by another state. *De jure* border settlement (or its lack), however, requires no such explicit, official demands. Instead, border settlement focuses upon whether a state has signed an international agreement delimiting its border with a neighboring state. This international law focus does not rest upon whether competing sovereign jurisdictional claims exist. It is, for example, theoretically plausible that a boundary lacks definition under international law (i.e., is unsettled), but no explicit claim exists (e.g., India-Bhutan, Burundi-Rwanda, or part of the China-Vietnam history). Similarly, these distinct conceptualizations allow an actor to delimit its border with a neighboring state and subsequently raise an explicit territorial claim (e.g., Ecuador-Peru or Bolivia-Chile). We therefore conclude that border settlement and territorial claims each capture some information that is unique to their individual conceptualizations, and Table D.1 supports this position.

The importance for the distinction between claims and border settlement arises from the territorial peace (Gibler 2012; Owsiak 2012) and steps to war (Vasquez 2009) research programs; each argues that settled – as opposed to unsettled borders – create a more peaceful *context* in which interstate relations occur. This implies that territorial claims that exist after border settlement might be different than those that appear before it. Two additional empirical analyses confirm this supposition. First, we examine the contiguous dyad-years with territorial claims (from Table D.1) to see whether salience levels vary for territorial claims when borders are (un)settled. More salient territorial claims concern ethnic kin, the homeland (i.e., not dependent territory), or historical claims to sovereignty and may also contain a sizeable population, economic resources, or a militarily strategic advantage (Hensel et al. 2008). Difference-in-means tests (available from authors) reveal that claim-years in the post-border settlement context are indeed significantly less salient. In particular, claim-years after border settlement are significantly less likely to have tangible (e.g., economic or strategic) salience, but no more or less likely to have intangible (i.e., ethnic, historical) salience.[5] Numerous factors might explain such a finding – for example, domestic audiences may not favor ending a claim that supports ethnic kin; international border agreements might not fully or effectively resolve claims with intangible salience; or states might increasingly (and strategically) frame their territorial claims post-border settlement to highlight intangible salience because such claims might still be permissible under international law (e.g., Russia's recent claims to protect Russians living in Crimea). Future research might investigate these possible explanations in greater detail.

As a second approach, we change the unit of analysis slightly. Rather than examine contiguous dyad-years (which may over-sample long claims), we instead investigate ICOW territorial claims as the unit of analysis. ICOW identifies 837 territorial claims (Frederick et al. 2014). 474 of these claims occur between land contiguous states, and we have settlement data on 400. Of these latter claims, 57.50% (n=230) begin before border settlement[6] (e.g., Russia-Turkey), while 42.50% (n=170) begin after border settlement (e.g., Zambia-Malawi). To simplify the discussion, we will refer to these as pre- and post-settlement claims (respectively) throughout the remainder of this discussion.

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[5] If a contiguous dyad has more than one ICOW claim in a given year, we use the maximum salience scores.
[6] 53.04% of these claims resolve before border settlement, while 46.96% cross the border settlement threshold (e.g., Peru-Bolivia).

Six findings emerge from studying and comparing the characteristics of pre- and post-settlement claims.[7] First, post-settlement claims are significantly shorter than pre-settlement claims. On average, pre-settlement claims last 20.67 years, while post-settlement claims last 10.68 years. This difference is statistically significant ($p<0.05$) and corresponds well with Clay and Owsiak (2016), who argue that states should bargain harder over border delimitation than other territorial claim types because border delimitations exist indefinitely under international law (see also Kocs 1995; Fearon 1998). Second, salience does not appear to vary significantly across the two settlement contexts. This holds when we consider salience overall, as well as tangible and intangible salience separately (Hensel et al. 2008). At first glance, this contradicts the dyad-year findings above. Yet salience is lower in post-settlement claims, and the salience scores we get for this analysis and the one above are similar. This suggests that the differences in statistical significance may result from the lower number of observations when examining contiguous territorial claims (n=400), as opposed to contiguous claim dyad-years (n=5,471), as the unit of analysis.

Third, post-settlement claims are significantly more likely to involve islands; 17.65% of post-settlement claims concern islands, while only 10.00% of pre-settlement claims do so. This suggests a potential sequence to territorial claims. It may be, for example, that states contest land borders, delimit these borders, and then contest island (and later, maritime) territory. Future research might study this sequencing possibility in greater detail. Fourth, colonial claims also appear significantly more frequently post-settlement. In particular, 7.65% of claims concern colonial territories, while 0.43% of pre-settlement claims do so. Although peculiar at first glance, this makes some sense. Colonial powers often do not advance territorial claims against one another until after they delimit their homeland territory and respective spheres of influence. Post-settlement claims among colonial powers are therefore about adjusting colonial borders, rather than purely delimiting them (e.g., France and Germany in Africa).

Fifth, pre- and post-settlement claims vary substantially by region. Table D.2 presents these data. Generally speaking, the Americas, Middle East/North Africa, and Asia/Pacific raised the majority of their claims pre-settlement. In the Americas, for example, 73.68% of all claims (42 of 57) begin pre-border settlement; only 26.32% (15 of 57) begin after border settlement. This trend, however, results largely from how Latin American states entered the system. Spain failed to delimit the borders between its viceroyalties clearly in the Americas. Thus, most Latin American states entered the system with claims that persisted until border delimitation occurred (although a number remain; e.g., Chile-Bolivia). A similar phenomenon occurred in the Middle East. In contrast, Africa entered with more clearly delimited borders, as colonial powers exerted much effort to define their various holdings' internal and external jurisdictional limits. Many African states subsequently adopted these colonial borders (i.e., *uti possidetis*), which reduced the number of claims that could precede border settlement. Thus, the claims that did arise – usually over access to resources or ethnic kin – necessarily occurred post-settlement. Finally, Europe demonstrates a unique pattern, with 50% of its claims (or 75 of 150) occurring post-settlement. A closer examination of these data, however, suggests that a significant number of these claims (25 of 75, or 33% of post-settlement claims) result from the World Wars or colonial activity (see above; e.g., France-Germany). In short, different regions experienced different border settlement processes, and this creates variation in the number of claims that appear during the pre- and post-border settlement contexts.

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[7] "Statistical significance" in this discussion refers to difference-in-means tests (available from the authors) that are significant at the $p<0.05$ level.

Table D.2. Pre- and Post-Border Settlement Territorial Claims by Region

	Pre-Settlement Claims		Post-Settlement Claims		
Region	Frequency	% Region's Claims (row)	Frequency	% Region's Claims (row)	*Total*
Americas	42	73.68%	15	26.31%	57
Europe	75	50.00%	75	50.00%	150
Africa	19	32.20%	40	67.80%	59
Middle East/North Africa	43	74.14%	15	25.86%	58
Asia/Pacific	51	67.11%	25	32.89%	76
Total	230	57.50%	170	42.50%	400

Finally, the management of claims varies significantly across the pre- and post-settlement periods. States use a significantly greater number of militarized interstate disputes (MIDs) to handle their territorial claims in the pre-border settlement period (mean=2.12 MIDs) than the post-settlement period (mean=0.91 MIDs). Furthermore, these MIDs are more likely to be fatal and escalate to war in the pre-settlement period (mean=1.08 MIDs and 0.28 wars respectively), as opposed to the post-settlement period (mean=0.48 MIDs and 0.15 wars respectively). This corresponds with existing work by Kocs (1995), Gibler (2012), and Owsiak (2012), each of which uncover a decrease in conflict behavior after border settlement occurs.

In the end, two conclusions result from a comparison of the IBAD and ICOW data. First, border settlement and territorial claims are conceptually related but distinct.[8] The empirical data confirm this. Border settlement and territorial claims data often align, but they also diverge in important ways – e.g., an absence of claims before border settlement or the presence of claims after border settlement. Second, (un)settled borders create a distinct context in which claim characteristics vary along a number of dimensions – claim onset, length, salience, the use of violence and other characteristics (e.g., islands or colonial territory). Future research therefore might use the (settled) status of borders to study territorial claims in greater detail.

Part D.2. A Comparison to Correlates of War (COW) Territorial Change Data.

De jure border settlement also relates conceptually to territorial changes (Tir, Schafer, Diehl, and Goertz 1998). As neighboring states sign international agreements that delimit the entirety of their mutual borders (i.e., settle their borders), they may also transfer territory between them – notably, when the physical location of the border is changed (Gibler and Tir 2010:954). It is therefore natural to ask what relationship exists between territorial changes and border settlement.

Comparing the characteristics of pre- and post-settlement territorial changes yields a few noteworthy findings. First, as with territorial claims, *de jure* border settlement is not synonymous with territorial changes. Table D.3 (below) underscores this point. Territorial changes certainly occur more frequently before borders settle. Of the contiguous dyad-years with unsettled borders in the period 1816-2001, 2.39% (or 92 of 3,760) contain a territorial change. In sharp contrast, of the contiguous dyad-years with settled borders, only 0.40% (or 54 of 13.545) include a territorial

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[8] Schultz (2014) makes a similar point. Our data differ from Schultz in two ways. First, we do not require states to have a militarized dispute to enter our dataset. Second, we track the process of reaching border agreements.

claim. This relationship is statistically significant (χ^2=142.67; $p<0.00$) and strongly negative (Υ=-0.72, a.s.e.=0.04).

Despite this strong, negative relationship, the data suggest that territorial changes and *de jure* border settlement are not capturing precisely the same thing. For example, a substantial percentage of all territorial changes within contiguous dyad-years (36.99% - or 54 of 146) occur *after* border settlement. Furthermore, these 146 territorial changes exist within 85 contiguous dyads. This suggests that a sizeable number of contiguous dyads do not experience territorial changes at all – before, during, or after the *de jure* settlement process. We therefore conclude that territorial changes may play a part in the *de jure* settlement process, but they are not necessary for it to occur. This highlights the importance of thinking about *de jure* settlement independent of territorial changes.

Table D.3. Bivariate Relationship: Border Settlement and Territorial Changes.

| | Borders Settled | | | | | |
| | No | | Yes | | Total | |
Territorial Change	Frequency	% Dyad-Years with/without Claim (col)	Frequency	% Dyad-Years with/without Claim (col)	Frequency	% Dyad-Years with/without Claim (col)
No	3,760	97.61%	13,491	99.60%	17,251	99.16%
Yes	92	2.39%	54	0.40%	146	0.84%
Total	3,852		13,545		17,397	
X^2 (*p*-value)	142.67 (0.00)					
Υ (adj. stand. error)	-0.72 (0.04)					

Notes: These data capture whether (1) or not (0) a contiguous dyad-year experienced one or more territorial changes.

To gain additional insight, we next switch the unit of analysis to the territorial change within contiguous dyads, rather than the dyad-years used above (Tir et al. 1998). There are 174 territorial changes that occur within contiguous dyads for which we have *de jure* border settlement data. Of these, 62.64% (or 109 of 174) occur before *de jure* border settlement, while the remaining 37.36% (or 65 of 174) take place after border settlement. This aligns with the data presented above (Table D.3), and further analysis of these territorial changes produces two additional findings.

First, the characteristics of territorial changes that occur pre-*de jure* settlement differ slightly from those that occur after settlement. In particular, territorial changes via conquest fall significantly after border settlement (difference-in-means test; $p<0.10$). Changes that occur via other mechanisms, however – for example, annexation, cession, and secession (Tir et al. 1998) – do *not* change across the pre- and post-border settlement contexts. This suggests that conquest becomes a less acceptable method of executing territorial transfers after border settlement occurs – a point that would be consistent with our stance on border treaties under international law (see Appendix A.3). On a related note, (both) states use violence to manage a (potential) territorial change less frequently after border settlement occurs (difference-in-means test; $p<0.01$). This reinforces earlier findings that demonstrate a decline in militarized behavior after neighboring states achieve *de jure* border settlement (e.g., see Kocs 1995, Owsiak 2012). Finally, the area of the territory changing hands also declines by about 50% after border settlement. Territorial changes contain an average of 92,942 square miles before border settlement, but only 48,819

square kilometers after border settlement (difference-in-means test; $p<0.09$). This implies that larger parcels of land change ownership as *de jure* border settlement unfolds, with smaller adjustments following settlement. Future research might ascertain whether these later changes occur because of the demarcation process (see Appendix A.4) or because of some other distinguishing characteristic that differs across the pre- and post-settlement periods.

Second, territorial changes in the pre- and post-*de jure* border settlement phases vary by region. Table D.4 (below) presents these data. States execute most territorial changes in the Americas, Middle East/North Africa, and Asia/Pacific before *de jure* border settlement occurs. In the Americas, for example, 85.71% of all territorial changes occur prior to border settlement, with the remaining 14.29% taking place after border settlement. In contrast, states execute most territorial changes in Africa *after* border settlement, while Europe exhibits a more balanced distribution across the two contexts. These data closely mirror the regional distribution for territorial claims across the pre- and post-border settlement periods (see Table D.2). We believe this similarity exists for the same underlying reason discussed earlier: regions experienced different *de jure* border settlement processes, which creates variation in when territorial changes appear in contiguous dyads across regions.

Table D.4. Pre- and Post-Border Settlement Territorial Changes by Region

	Pre-Settlement Changes		Post-Settlement Changes		
Region	Frequency	% Region's Claims (row)	Frequency	% Region's Claims (row)	*Total*
Americas	24	85.71%	4	14.29%	28
Europe	38	51.35%	36	48.65%	74
Africa	2	14.29%	12	85.71%	14
Middle East/North Africa	25	75.76%	8	24.24%	33
Asia/Pacific	17	80.95%	4	19.05%	21
Total	106	62.35%	64	37.65%	170

Notes: We use the "entity" variable in the Territorial Change data to generate the above description (Tir et al. 1998).

In the end, two conclusions – similar to those obtained for a comparison of the IBAD and ICOW territorial claim data – result from a comparison of the IBAD and Territorial Change data. First, *de jure* border settlement and territorial changes are conceptually related but distinct. Border settlement and territorial changes often align, but they also diverge in important ways – e.g., a significant number of changes after border settlement. Second, (un)settled borders create a distinct context in which the characteristics associated with territorial changes vary, particularly with respect to how the change occurs (e.g., conquest), whether violence is used (by both sides) as the change occurs, and the area changing hands. Future research therefore might also use the (settled) status of borders to study territorial changes in greater detail.

Appendix E. IBAD Data Sources.

Sources used during the data collection process include, *inter alia*, Biger (1995), Brownlie (1979), Day (1987), Ireland (1938, 1941), Huth and Allee (2002), Kocs (1995), Prescott and Triggs (2008), and the International Boundary Studies created by the United States Department of State (e.g., United States Department of State 1978; for the full collection, see http://archive.law.fsu.edu/library/collection/LimitsinSeas/numericalibs-template.html).

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