

Population Dynamics and Susceptibility for Ethnic Conflict: The Case of Bosnia and Herzegovina

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While it is recognized that the progenitors of war are multilayered and complex and that they consist of political, historical, religious, demographic, economic, and psycho-cultural forces, this article reports on research that looked at the role of one them, demographic trends. Demographic trends can influence the rise of ethnic territoriality and ultimately violent resolution. Two of the three protagonists in the war, namely the Bosnian Muslims and the Bosnian Serbs, are the focus of the study. The level of abstraction at which these rival ethnic groups were sensitive to demographic trends, and therefore the level at which that rivalry played out, was the local municipality, the opstina where competition over jobs and political power was manifest. It is at this level that basic tenets of ethnic competition theory are considered to have been at work. An index of ethnic competition is introduced to measure competition in terms of the relative balance of ethnic populations. This index is complemented by analysis of the trend of relative ethnic population numbers over the two decades prior to the war. Data from the Yugoslavian census show how the demographic position of the Bosnian Serbs declined dramatically in over 90% of the opstinas throughout the country. These population trends are translated into an index of demographic disadvantage. Positive correlations between the two indices (ethnic competition and demographic disadvantage) and discrete-event data of hostilities between Serbs and Muslims are found to be significant. In addition, there is some evidence that the geographic pattern of the propensity for violence, while clearly part of a broad strategic Bosnian Serb national campaign, is also associated with local prewar demographic dynamics.

Introduction

The post-‘Cold War’, post-‘colonial’ world is a world in a transition marked by two trends, one towards democratization and the other towards the re-emergence of ethnic nationalism. Where the latter is allowed to flourish, before the fulfillment of the former, catastrophic conflict may result.¹ Throughout the former Soviet bloc and many parts of the developing world, the yoke of repressive

totalitarianism has been shed and the struggle to democratize and link up with the global economy has begun. Inevitably, in the passage from one to the other there is the danger of political vacuum with its attendant uncertainty. Instability then fosters ethnic nationalism and ethnic territoriality within populations, which, left unchecked, can lead to violent conflict and its intractable reinforcing dynamic (Ryan, 1995: 78).² Once set in motion, the dynamic, when it becomes

¹ It is, of course, misleading to suggest that democracy and ethno-nationalism are mutually exclusive. The struggle between Catholics and Protestants in Northern Ireland and the Basque separatist movements are sharp examples of violent conflict within well-established democratic electoral systems.

² Gurr (1972: 40), reporting on quantitative comparative studies of violent conflict within societies, notes consistent results which show that societies in transition from the most coercive (totalitarian) to the least coercive pass through a peak of magnitude of violence.

all-out war, can only be stopped at great cost. The proliferation of wars arising from ethnic conflict increases the urgency of study into the complex mechanisms of ethnic nationalism that predicate these wars.³ Reychler (1997: 36) notes that there has been no effort to develop 'early warning systems' which could inform proactive rather than the reactive action that is the current practice of supranational institutions like NATO and the United Nations. Clearly, social science has a responsibility to work meticulously through case histories of inter-ethnic catastrophes in order to build up some understanding that may be transferred to other potential trouble spots.

The case of the Bosnian war is the most recent, well-documented example of the need to examine the precursors to the resurgence of volatile ethnic nationalism that in turn create the dangerous potentiality for violent hostilities. Interest in Bosnia originated from field experience, by one of the authors, supervising elections in Bosnia from 1996 to 1998. The experience entailed 'up close' exposure to the aftermath of the war and accounts of the human experience during it. Observations in the field showed striking disparities in levels of damage from one area to another. Why, for example, were the villages around Dobojo, Banja Luka, and Prijedor shattered, while those around Prnjavor, Srbac, Bosanska Dubica, Celinac, and Sekovici were relatively unscathed? The need became obvious for extensive study of the circumstances that led up to the catastrophe and an attempt to make sense of them. In short, field experience with the struggles of what appeared to be ineffectual reactive measures brought into sharp focus the need to better understand in order to be able to be proactive.

³ As of 1995, the global count of conflicts amounted to 22 high-intensity, 39 lower-intensity conflicts, and 40 serious disputes. In that year, five groups were victims of genocide or politicide (Reychler, 1997: 1).

Ethnicity, Nationalism, and the Historic Roots of Conflict in Bosnia

The Bosnian war arose out of a familiar set of circumstances: the collapse of totalitarian control of territory producing a political void that, in turn, exposes a deep-rooted rivalry between ethnic groups leading to a struggle for control of territory ending in an attempt at violent resolution. Central to the process are the notoriously ambiguous concepts of ethnicity and nationalism.

Outside the context of Bosnia, ethnicity relates to the identification of a people by language, religion, geographical location, the sharing of common historical experience, or various other criteria (Allcock, Milivojevic & Horton, 1998: 91). The pitfall in the foregoing definition arises from a dependence on the use of traits to identify rather than on simply the act of identification. Since the identifier of ethnicity can be anything, a more durable definition should be based on Olzak's (1992: 25) concept of a 'social boundary'. An ethnic group is therefore defined by a boundary ascribed by the members of the ethnic group or others outside. Membership of the group is based on the presumption of a shared trait or traits that can be anything from genealogy to dressing habits. That ethnic identity is ascribed or even assigned is illustrated by the practice of Hindus in colonial India converting to Sikhism because the British army preferred Sikh recruits (Nagel citing Garnett in Olzak & Nagel, 1986: 95).

The root of 'nationalism' is 'nation', defined as 'an extensive aggregation of persons so closely associated with each other by common descent, language or history, as to form a distinct race or people' (Simpson & Weiner, 1987). 'Nation' by the latter definition becomes equivalent to ethnic group. 'Nationalism' arises when the members of a 'nation' demand that it be organized into a sovereign state. It is an idea that has come to

shape political history over the last two centuries and has become pejorative. Alter (1994) defines 'nationalists' as 'people whose actions or reasoning give indiscriminate precedence to the interests of one nation (usually their own) over those of other nations, and who are prepared to disregard those others for the sacrosanct honor of their own nation'.

Bosnia has been described as a microcosm of the Balkans, a human mosaic made up of the genes of innumerable peoples (Malcolm, 1994). Over the past three millennia it has been settled or invaded by Illyrians, Celts, Romans, Goths, Magyars, Avars, Slavs, Turks, and Jews. Geographically, Bosnia is part of a 'shatter belt', a frontier marchland subjected to the east versus west, north versus south, ebb and flow of political territorial expansion and contraction. The resulting accumulation of racial types might be ascribed to Bosnia's physical geography of mountainous terrain and harsh environment offering refuge to one settling group after the other.

Out of the human mosaic the Slav invasions of the Balkans of the sixth and seventh centuries came to establish the linguistic identity of the region. From the ninth century, the Church of Rome brought religion, education, and literature in the Latin alphabet to Croatia and Dalmatia, while the Church of Byzantium in Constantinople brought the Eastern Orthodox Christianity and the Cyrillic alphabet to Bulgaria, Macedonia, and eventually most of Serbia. In this way the western and eastern branches of the Christian church established essentially two ethnic groups based on religion, later to define the nations of the Croats of the Roman Church and the Serbs of the Orthodox Church. Roman Catholic and Orthodox Christians made up a significant proportion, but not all of the population, of Bosnia of the Middle Ages (Malcolm, 1994: 30). They formed the embryos of what were to be

become the so-called Bosnian Croats and the Bosnian Serbs.⁴ Then, at the end of the 15th century, the expansion of the Ottoman Empire into Bosnia resulted in the conversion of many Christians – Roman Catholics, Orthodox, and other Christian sects – to Islam. The invasion so produced the basis for the third major ethnic group, which was to become the third protagonist in the 1992–95 war.

Throughout its history, Bosnia has been, at one and the same time, politically peripheral and caught between more powerful external political forces. Bosnia's status as an independent state has been only fleeting, most notably at the end of the 12th century and for much of the 14th. A recurrent pattern has been for the three principal Bosnian ethnic groups to be drawn into or caught up in the orbit of external expansionist political forces. As Ottoman rule of Bosnia began to go into decline towards the end of the 19th century, Croat Catholic nationalism within the Austro-Hungarian Empire to the north, and Serb Orthodox nationalism with the creation of an autonomous Serbian principality to the east, began to grow (Donia & Fine, 1994: 89). During the years that Bosnia was a protectorate and finally annexed within the Austro-Hungarian Empire, both Serbian and Croatian nationalist movements emerged within Bosnia, each with aspirations for absorbing Bosnia into a Greater Croatia and a Greater Serbia, respectively. Then in World War II, under the mask of occupation by Germany and Italy, Yugoslavia underwent a nasty civil war for which Bosnia became the theatre of conflict (Donia & Fine, 1994: 136). Territorial antagonism between Croatia and Serbia was again most brutally manifest in the atrocities committed by the fascist Croatian Ustasas and Serbian royalist Chechniks. Ever since the fall of the

⁴ Roman Catholics and Orthodox Christians in Bosnia did not call themselves Croats and Serbs, respectively, until around the end of the 19th century (Malcolm, 1994: 200).

Ottoman Empire in 1874 the Bosnian Muslims have never been able to assert themselves as a distinct ethnic group (qua nation), with aspirations of statehood, as have the Croats and Serbs. The Bosnian Muslims were repeatedly caught in the middle of a tug of war. Their means of survival in this setting was to be pragmatic and to seek workable political coalitions (Donia & Fine, 1994: 105).

It was not until the Tito era in Yugoslavia that the Bosnian Muslims' ethnic identity and status as a nation was really recognized. The process of the recognition whereby Muslims were considered a distinct community was gradual. They were able to report themselves as 'undetermined Muslim', Serb Muslim, or Croat Muslim in the 1948 Census and were not given full status of 'nation'⁵ within Bosnia until 1969 (Friedman, 1996: 159). Then in 1974 Tito enacted another constitution, effectively turning Yugoslavia into a confederation of six republics, of which one was Bosnia and Herzegovina. The consequence of this new status for Muslims as a 'nation' was to place them as the dominant group when competing with Bosnian Croats and Serbs for administrative and legislative positions. Census data show that from 1971 onwards Bosnian Muslims enjoyed a plurality (defined as the most numerous ethnic group) overall.

The Political Construction of Ethnic Nationalism Prior to the 1992–94 War

For 50 years the total authority of the Communist Party of the former Yugoslavia and

the personal leadership of its leader, Marshall Tito, had maintained stability in a system that, de facto, totally lacked democratic institutions. Ramet (1992: 34) asserts that this stability was maintained because the Yugoslav federal system was purposely designed to regulate national conflict between the republics and ethnic groups and the 'Tito regime (1945–80) was the ultimate arbiter in this system'. For the period 1973–79, Yugoslavia's status on political rights, on a scale of one to seven (one being positive and seven being negative), was scored six and it was ranked 96th out of 135 nations (Taylor & Jodice, 1983: 60). Through political repression, an external impression of total equanimity was sustained. Behind the façade, however, a revised constitution was introduced in 1974 that ostensibly devolved administrative, economic, social, and some political power to the six 'republics' and 'autonomous' regions (Dyker & Vejvoda, 1996: 15). Although as long as Tito lived total centralized control was maintained, the effect of the 1974 constitution set in place the blueprint for the political disintegration of Yugoslavia once he was gone.

Following Tito's death in 1980, Yugoslavia began to be pulled apart by opposing political philosophies within the country, philosophies that went back to the formation of the Yugoslavia concept in the 1920s (Lampe, 1999: 81). On the one hand, the Croats tended to view Yugoslavia as a decentralized federation, while on the other the Serbs were espoused to a highly centralized system (Malcolm, 1994: 164). Once again Bosnia and Herzegovina, with sizeable Croat and Serb populations within its territory, straddled a major political 'fault line'. With Croatia's, and later Bosnia's, secession from Yugoslavia in 1992, the Bosnian Croats and the Bosnian Serbs suddenly found themselves part of ethnic minorities in a new state instead of being members of the dominant

⁵ There is considerable confusion trying to explain Serbo-Croat concepts of 'nation' (Narod) and 'nationality' (Narodnost) in English. The 1974 Yugoslavian constitution gave Muslims the status of 'nation' (Narod) along with Slovenes, Croats, Serbs, Macedonians, and Montenegrins. Nationality or Narodnost was a designation given to national minorities living within Yugoslavia but having some mother state outside, i.e. Turks, Italians, Albanians, and Hungarians (Hodson, Sekulic & Massey, 1994: 1543).

Croat and Serb nations within Yugoslavia. The 'security blanket' of collective identity afforded by communism was now replaced by another form of collective identity, ethnic nationalism (Pajić, 1995). This was nationalism antithetical to democratic institutions. It is perhaps ironic that the referendum for self-determination guaranteed to the republics by the Yugoslav constitution brought about the final breakup of the centralized state.

The political environment that presaged the Bosnian war operated at two levels. There were, first, the supranational forces of the nationalist propaganda war between Croatia and Serb-dominated Yugoslavia⁶ and, second, Croat and Serb propaganda from these respective countries directed at their compatriots in Bosnia.⁷ Much later came the effective partition within Bosnia between three political parties: the Croat Hrvatska Demokratska Zajednica (HDZ), the Serb Srpska Demokratska Stranka (SDS), and the Muslim Stranka Demokratske Akcije (SDA). There was considerable time-lag between the external forces of ethnic nationalism and those internal to Bosnia. This time-lag was perhaps the basis for misinterpretation by Western journalists and historians that 'the real causes of Bosnia and Herzegovina's destruction originated outside and that left alone Bosnia might have lived in peace' (Powers, 1996: 221). Rather, the breakup was the consequence of the interplay of both external and internal forces. The political alignment of the Bosnian population along ethnic lines clearly needed an external stimulus. Delay in collective action by the three ethnic groups might be attributed to the

'free-rider dilemma'. The dilemma arises because individuals will not invest in the cost of participating in collective action, the success of which is uncertain, when many others will benefit if the action is successful without bearing the cost of the action if it fails (Hechter, Friedman & Appelbaum, 1982: 416). In the event, the dilemma was broken, in the voting in the 1990 election, because the cost of not voting ethnically was far outweighed by much greater costs to individuals if they did not. Powers notes that members of each ethnic group voted in the 1990 election along ethnic nationalist lines, even though they were unimpressed with the party leaders, out of fear that ethnic groups to which they did not belong would gain political ascendancy (Powers, 1996: 242). After the 1990 election, Bosnia and Herzegovina was de facto partitioned:

The Serbs established 'autonomous' provinces across Bosnia, while the predominantly Croat region of western Herzegovina set up its own monetary system, based on the Croatian Dinar . . . Muslim dominated Zenica in central Bosnia refused to send conscripts to the Yugoslavian National Army and Croat Listica, in western Herzegovina, refused to allow army convoys to pass through its territory. (Powers, 1996: 243)

The political construction of ethnic nationalism was now complete.⁸

Social Forces that Underpin the Political Dynamic of Ethnic Nationalism

Political interests, first external and then internal to Bosnia, mobilized the division of the new state into ethnic nationalist groups hostile to one another. While the importance

⁶ The Federal Republic of Yugoslavia, while made up of Montenegro and Serbia with its provinces of Kosovo and Vojvodina, became associated with a government linked with fanatical Serbian nationalism.

⁷ For example, 'at the beginning of 1989 radio transmitters in Vojvodina, which had, hitherto, been used to broadcast to the province's many national minorities, were redirected to beam Serbian propaganda at Bosnia-Herzegovina and Serb-populated regions of Croatia' (Bennett, 1995: 116).

⁸ During the period from 1820 to 1918, as the Ottoman Empire gradually relinquished Bosnia and Herzegovina and the Austro-Hungarian Empire gained control, the pattern of political alignments and forces for change in the region were to some extent paralleled by the pattern as Yugoslavia broke up.

of this political construction should not be diminished, other social dimensions clearly existed which predisposed the population to be mobilized. The political account is more accessible as it was prominently articulated through the organs of the media. However Lippman (1962), as cited by Ryan, points out 'how the lack of emphasis on the dynamics of social processes in politics has led to the study of human problems by excluding humanity' (1995: 79). Byrne & Carter (1996: 1) propose that these social processes are made up of six interrelated 'facets' or 'forces': history, religion, demographics, political institutions and non-institutional behavior, economics and psycho-cultural factors. These six factors can be conceptualized as the six faces of Rubic's cube, the analogy being that to concentrate on solving one face of the puzzle of ethnic nationalism only is unlikely to provide a complete solution (Byrne & Carter, 1996: 1).

This article seeks to account for a largely neglected face of the Bosnian Rubic's cube, namely the interplay of demographic trends during the 40 years leading up to the Bosnian war. While taking account of a context of specific historical, political, economic, and religious mechanisms, demographic forces can, it is proposed, represent a strategic element in the process of inter-ethnic strife. The shifting balance of populations for whom ethnic boundaries are sharply drawn, the Serbs, Croats, and Muslims, can be related, it is argued, to ethnic collective action.

Towards a Theoretical Framework for Relating Demographic Trends to Ethnic Conflict

Demographic trends, along with historical, religious, economic, and psycho-cultural factors, are to be viewed not as directly causing collective action so much as being antecedents to it, their influence being medi-

ated by political action (Hechter, Friedman & Appelbaum, 1982: 430). Division of populations into groups each of clear ethnic identity can be the basis for stratification.⁹ Stratification must then in turn be mobilized by ethnic organizations such as political institutions. These are the conclusions of Hechter, Friedman & Appelbaum, who in working through the logic of their 'rational choice theory' note: 'if collective action merely resulted from differential stratification there would be far more of it than the historical record reveals. The striking fact about any kind of collective action is its relative rarity'.

Ethnic competition theory, as applied by Olzak (1992) in her work on confrontations between racial and ethnic segments of the American labor force at the turn of the century, complements Hechter's 'rational choice theory'. Ethnic competition theory is built on the proposition that the propensity for ethnic collective action is heightened by factors that increase levels of competition between groups. The key claim of competition theory is that increases in levels of ethnic and racial competition for valued resources 'such as jobs, housing and marital partners' ignite ethnic collective action (Olzak, 1992: 7). By combining Hechter and Olzak it can be postulated that factors stimulating inter-ethnic competition will, with the added stimulus of political mobilization, result in the collective action of conflict. Ethnic populations are seen as being in competition for resources. They are therefore viewed from the human ecological Darwinian perspective of Barth (1956) and Park &

⁹ The religious basis for stratification, that is ethnic boundaries such as between Roman Catholic, Orthodox Catholic, and Muslim, is self-evident. Atrocities committed in World War II by Croat Ustasas against Serbs, Jews, Gypsies, and Partisans, and by Serb royalist Chetniks against Muslim civilians, Serb Partisans, and Croats constitute a potent historical antecedent to ethnic division. However, there is little if any documentation in the Western literature of economic stratification, i.e. class distinction based on income differential, between Croats, Muslims, and Serbs.

Burgess (1921). Olzak's (1992) competition theory can be set out in seven basic tenets:

- (1) Ethnicity is a social boundary defined by society. An ethnic group is therefore defined by a boundary ascribed by the group or others outside. Membership of the group is based on the presumption of shared (a) genealogy, (b) cultural traits of language, religion, dress, custom, or history, and (c) nationality or regional origin.
- (2) Ethnic boundaries are maintained when there is a set of systematic rules governing inter-ethnic actions. The stability of ethnic boundaries is a function of inter-ethnic competition, which in turn is influenced by the availability of resources.
- (3) A 'fundamental niche' is an environment containing sufficient resources for the survival of a group. A 'realized niche' is that part of a fundamental niche which is occupied simultaneously by two groups.
- (4) Fundamental-niche overlap is an ecological process that leads to competition between two groups over essential resources. It is based on Gause's (1934) competitive exclusion principle, namely, that if two groups try to exploit the same set of finite resources one group will try to exclude the other.
- (5) 'Both competition and conflict are forms of interaction, but competition is a struggle between individuals, or groups of individuals, who are not necessarily in contact, while conflict is a contest in which contact is indispensable' (Park, in Park & Burgess, 1921: 574).
- (6) Competition is heightened during periods of social change or societal transformation. A shrinking economy diminishes the amount of available resources and can therefore cause competition to intensify.

- (7) When a group becomes dominant, the results for the two groups are accommodation, exclusion, or violent resolution.

Ethnic Competition and Population Numbers in Bosnia

The idea that ethnic competition perceived through population numbers might be a strong stimulus to inter-ethnic hatred and in turn civil war in Bosnia and Herzegovina came from anecdotal information in the field. Bosnian Serbs had often been heard to express a fear that Bosnian Muslim families had large numbers of children and that this represented a threat to Bosnian Serbs. Accounts of Serbian propaganda prior to the war are replete with references to the demographic threat.

O'Ballance (1995: 197) referring to the Bosnian Serbian General Ratko Mladic:

Mladic considered that the greatest danger to Bosnian Serbs was the Muslim 'demographic bomb', meaning a Muslim population explosion, saying unflatteringly that Muslim women were 'production machines, each with ten or twelve children', and that although Bosnian Muslims had always been urban dwellers, congregating in towns, because of their ever increasing numbers they were now in need of extra land in which to live.

Cigar (1995: 80) reporting on negotiations between Radovan Karadzic and Alija Izetbegovic:

In the course of political negotiations, the Bosnian Serb leader Karadzic reportedly focused specifically on the Muslim birth rate as supporting proof of his concern about the Muslim threat.

Uzelak (1998: 466) writing on Franjo Tudjman's nationalist ideology notes Tudjman's demographic paranoia:

The policy of the Muslim leadership and 'their inclination towards an increasing birthrate' directly endangered the survival of a Croatian nation in Bosnia and Herzegovina.

Here is indication that at the root of Serb–Muslim violent conflict there had developed over some period ethnic competition perceived in terms of demographic numbers. While not wishing to ignore the fact that the conflict of the Bosnian war was three-way, between Serb, Muslim, and Croat, this study concentrates on the Serb–Muslim antagonism. The central hypothesis is that since this antagonism appears to have been articulated demographically, the ethnic competition that led up to the war can be researched via analysis of the changing balance of ethnic population numbers. Three stages to the retrogression can be hypothesized:

- (1) Prior to the secession of Bosnia from Yugoslavia, ethnic groups were progressing towards harmony with increasing numbers of cases of intermarriage (including Serb–Muslim marriages). This progression was most noticeable in urban populations.
- (2) External political forces from Serbia and Croatia re-ignited old inter-ethnic grievances, so reinstating ethnic boundaries.
- (3) With ethnic boundaries reinstated in a system where no one group had overall strategic control or total power, relative population numbers became important.

Questions to be considered therefore are:

- (1) Were relative demographic numbers important and can they be used to measure ethnic competition quantitatively?
- (2) In an environment of sharpened ethnic boundaries, and assuming ethnic competition to be measured in terms of relative population numbers, at what level of geographic abstraction was this perceived? It becomes an issue of identity and territory (Knight, 1982: 518).
- (3) Is there evidence of fundamental-niche

overlap between Muslims and Serbs, and, if so, where in Bosnia did it occur?

- (4) Is there any spatial association between demographic trends reflecting ethnic competition and the pattern of hostilities between Serbs and Muslims during the war?

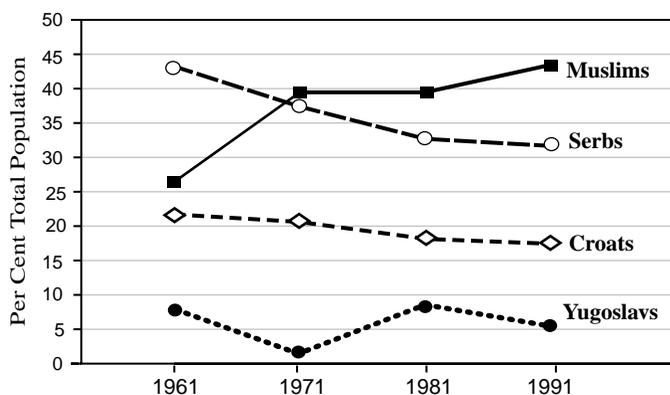
Establishing the Ethnic Boundary and the Accompanying Aggregate Population Trends.

The ethnic boundary between Serb and Muslim took some 30 years after the formation of Yugoslavia in 1948 to become clearly defined (Friedman, 1996: 151). Yugoslavian census of population forms in 1948 allowed respondents to declare themselves Serb Muslim, Croat Muslim, or as 'nationally undetermined Muslims'. In 1953, the Muslim designation was dropped and replaced by 'Yugoslav undetermined', but in the 1961 census of population Muslim was recorded as ethnic membership. The 1971 census of population recorded Muslims for the first time as a separate Slav nation,¹⁰ like the designations of Serb and Croat. Figure 1 shows how this change in designation coincided with Muslims becoming the majority ethnic group by 1971, while the proportion of the populace declaring itself Yugoslav declined dramatically.

During the 1970s, President Tito, as part of his nonalignment policy, openly courted Arab countries of the Middle East (Friedman, 1996: 154). This policy, in addition to the 1971 census designation, further enhanced the ethno-national identity of the Muslims. Between 1971 and 1991, the percentage of Muslims in the population increased from 39.57 to 43.67, an absolute gain of 419,128. Meanwhile the Serbs declined from 37.19% to 31.37%, representing an absolute loss of

¹⁰ See note 5 above.

Figure 1. Population Trends of Ethnic Groups in Bosnia and Herzegovina 1961–91



27,428 (Marić, 1996). This plurality shift was due to several factors, including the change in census terminology, agitation for persons previously registered as 'Yugoslavs' to switch to their ethnic labels, and historically higher Muslim birth rates (Ramet, 1992: 180; Schierup, 1990: 111).¹¹

The foregoing census record shows how, to use Olzak's term, ethnic boundaries must have sharpened during the lead-up to the war. Another trend that would have served to aggravate the potential for ethnic division was economic hardship. Of the six republics, Bosnia and Herzegovina was one of the poorest in terms of Gross Domestic Product per capita.¹² This relative poverty was aggravated in the decade prior to the war by an accelerating recession throughout Yugoslavia. This recession affected Bosnia

and Herzegovina significantly more than neighboring Croatia and Serbia,¹³ and so job opportunities and economic advancement were probably more difficult to attain than in other parts of Yugoslavia. It is therefore possible that within the narrow rural valley reaches of Bosnia and Herzegovina there existed local 'fundamental niches' and local 'niche overlap' with competition for resources in a marginal economy leading to ethnic competition between Muslims and Serbs. With a decline of the Serb population occurring at the same time as the Muslim population was increasing by the same proportion, it is fair to conclude that such competition, if it was occurring, must have heightened considerably between 1971 and 1991.

¹¹ In 1971, there were about 146,819 Bosnian citizens temporarily employed abroad. The ethnic breakdown of these workers is not available, but the total numbers alone could not account for the switch in ethnic plurality between 1961 and 1971.

¹² As of 1989 the GDP per capita in Bosnia and Herzegovina was \$11,424 in 1972 dollars, which was almost half the per capita GDP of Croatia and one-third of that of Slovenia for the same year (*Statistical Yearbook of Yugoslavia 1991*: 442, 475).

¹³ Between 1986 and 1989 the per capita GDP for Bosnia and Herzegovina declined by 9.23%, while for Croatia and Serbia it declined by 7.39% and 3.72%, respectively. However, as Friedman (1996: 223) notes, 'before fighting broke out in 1990, Bosnia and Herzegovina provided approximately 85% of Yugoslavia's iron ore and 40% of its coal and lignite, as well as 40% of its industrial production'. The Bosnian economy would therefore appear to have tended toward low wage and primary activity, rendering it a 'peripheral' economy to Yugoslavia's 'core'.

Approximate Indications of the Geography of Ethnic Competition

It would seem logical that the theater of inter-ethnic rivalry should be manifest less at the national level than at a more local level. While mobilization of ethnic identity was conducted at the national level (Olzak, 1992: 17), the articulation of competition would have required local niche overlap. Therefore competition will have occurred only if the locations of the populations of competing groups tended to be geographically concurrent. The Croatian example is instructive. Following the declaration of Croatian independence, the Serbs in Croatia seized control of several areas throughout Croatia and declared a Serb state (Republika Srpska Krajina). An analysis of the demographic makeup of the *opcinas*¹⁴ contained within the UNPROFOR ceasefire lines, established in March 1992, indicates that the average population in 1991 within these municipalities was 50% Serb and 32% Croat, while the Serb component in all of Croatia was about 12%. In 11 of the 21 *opcinas* the Serbs were an absolute majority and in two more they were in the plurality. Clearly, demographics was an important factor in the determination of the RSK. In Bosnia, maps of the distributions of Serb, Muslim, and Croat populations for 1991 by *opstina* (see Figure 2)¹⁵ show that while Croats tended to be concentrated in west central Bosnia and Herzegov-

ina, in a broad swath from Capljina to Livno in the west to Brcko to Bosanski Brod in the east, the Serb and Muslim population distributions overlapped much more in the northwest and in the south and east. Spatial concurrence tended to occur in the northwest in Bosanska Krupa, Bosanski Novi, Sanski Most, and Ključ, and in the east in Bijeljina, Lopare, Ugljevik, Bratunac, Srebrenica, Vlasenica, and Kladanj.¹⁶ Furthermore, declines in the Serb population occurred not only in these areas in the lead-up to the war but was pervasive throughout Bosnia and Herzegovina (see Figure 3). The only *opstinas* of Serb-Muslim population spatial concurrence where there was Serb population gain proportionally were in the south in Cajnice, Capljina, Rudo, and Sokolac.

In addition to mapping areas of Serb-Muslim population concurrence accompanied by significant Serb population loss, a more critical event in the flux of demographic representation can be isolated, namely a change in population plurality where Serbs lost and Muslims gained. This plurality shift occurred in much more restricted areas in Prijedor, Sanski Most, Doboj, Vlasenica and the three *opstinas* that make up Sarajevo.

The significance of these demographic Muslim gains and Serb losses over the two decades prior to 1991 are further underlined when placed against the Yugoslavian 'ethnic key' policy. This policy allocated political power and jobs based on the percentage of each ethnic group as counted by the census (Dyker & Vejvoda, 1996: 97; Friedman, 1996: 161; Jelavich, 1997: 400; Malcolm, 1994: 204; Ramet, 1992: 36) at all levels of government, but most particularly at the municipal level, i.e. the *opstina*. As the

¹⁴ The demographic data on which the study is based are the four Yugoslavian censuses of population, 1961, 1971, 1981, and 1991 for the 109 municipal areas known as *opstinas* in Bosnia and Herzegovina and *opcinas* in Croatia. These *opstinas* are approximately equivalent to counties and vary in size from 83 sq. km (32 sq. miles) to 1300 sq. km (507 sq. miles). For each *opstina* the censuses recorded population broken down into five national designations: Serb, Croat, Muslim, Yugoslavian, and other, with the latter two designations representing very small minorities.

¹⁵ In order that demographic data for 1961, 1971, and 1991 could be compared geographically, the *opstina* boundaries as of 1961 (Marić, 1996) were used to map data for subsequent years. Where *opstinas* had been split, creating new *opstinas* in 1971 and 1991, their data were aggregated to the 1961 boundaries.

¹⁶ It is noteworthy that *opstinas* where Muslim and Croat population concentrations overlapped included Mostar, where protracted Croat-Muslim hostilities occurred throughout the war.

Figure 2. Distributions of Ethnic Population in Bosnia and Herzegovina in 1991

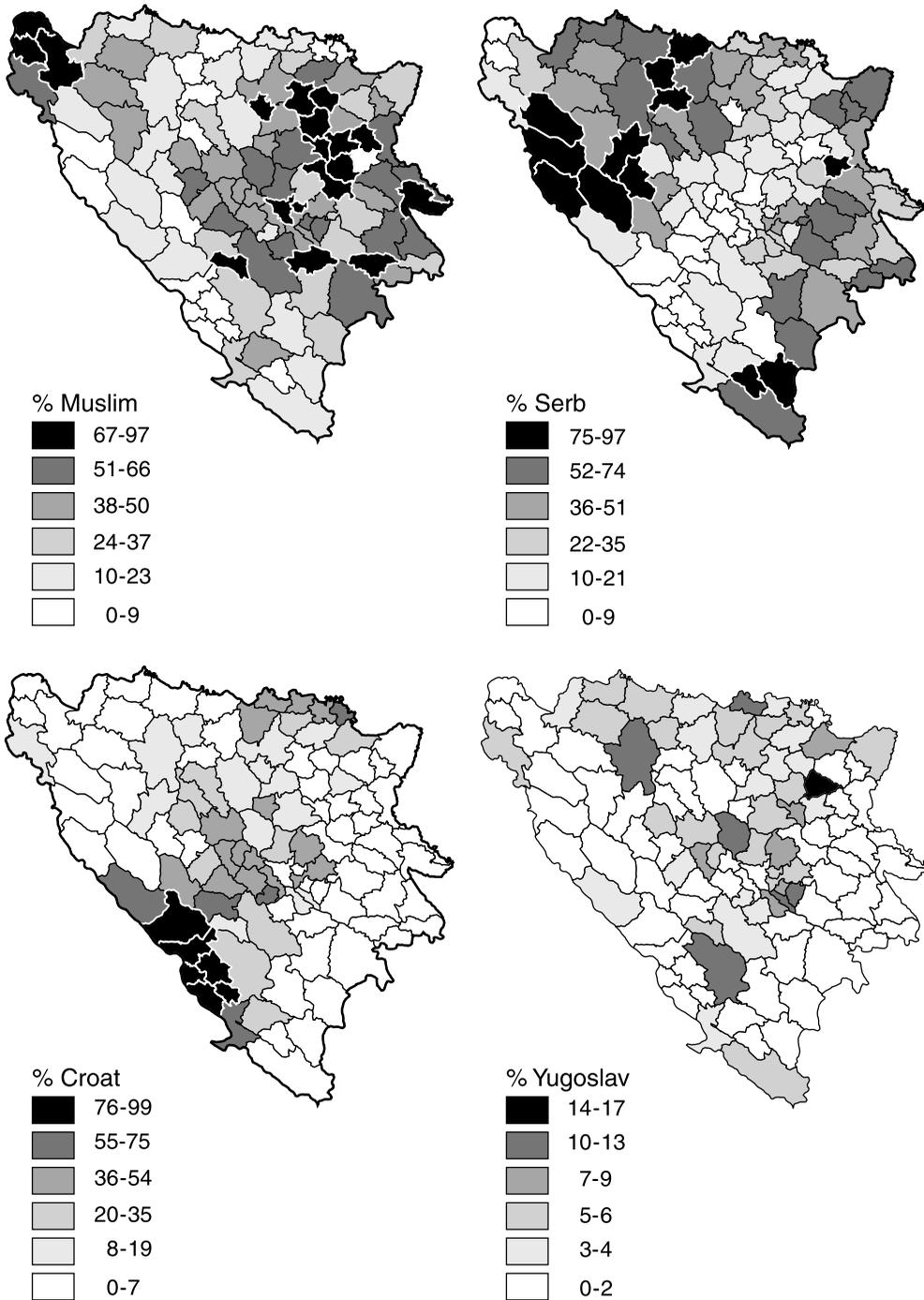
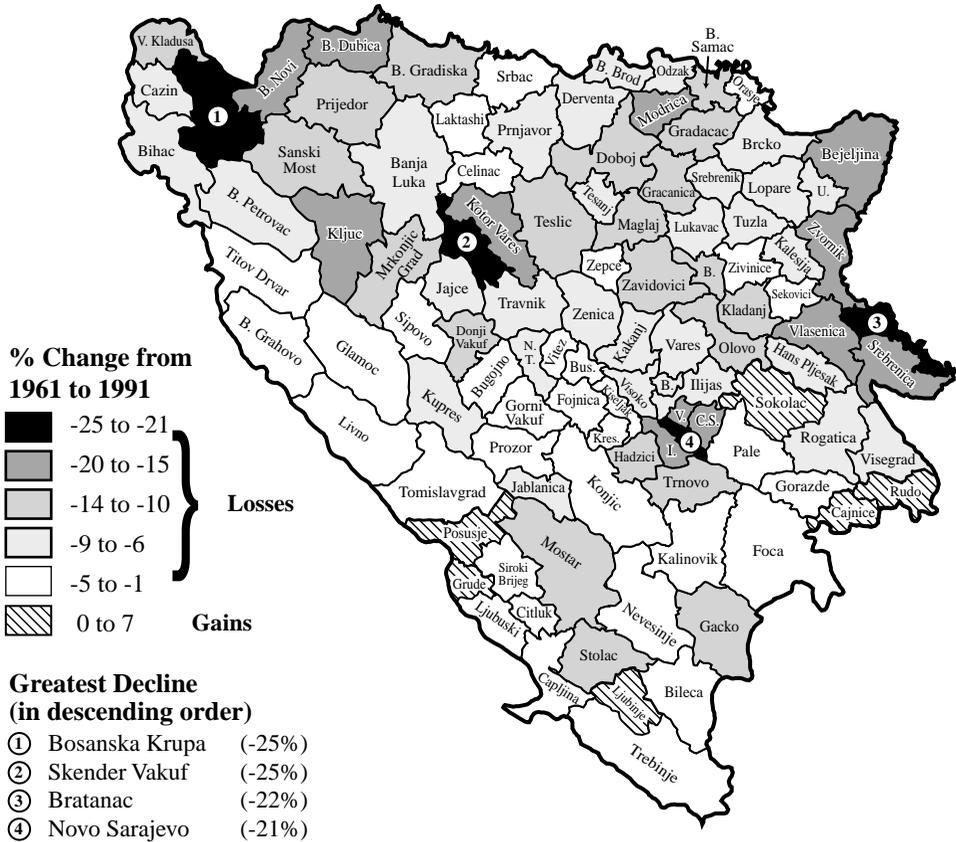


Figure 3. Distribution of the Decline of the Serb Population 1961–91



numbers of Muslims in the population increased while the Serbs declined, there would have been a transfer of jobs from Serbs to Muslims.

Quantifying the Geography of Ethnic Competition from Demographic Data

The identification of Muslim population increases and Serb population declines, which were generally concordant geographically, supports the possibility that there was some interaction between these trends and changing political events. Serbs clearly had reason to fear losing job opportunities and

their political franchise, not to mention having their ethnic identity submerged under growing numbers in specific regions within Bosnia and Herzegovina. When Radovan Karadzic, leader of the Bosnian Serbs, directed his followers to boycott the Bosnian referendum on independence in the spring of 1992, it is clear he understood the demographic numbers. Furthermore, it is clear that he understood the demographic geography of the area within Bosnia that he established as a Serb republic in the fall of 1991 (Bennett, 1995: 185).

The question now becomes, given the significance of demographic trends, how can demographic measures be devised and used

as indicators of ethnic competition? Underlying the recognition that demographic factors are a component of ethnic competition is the hypothesis that Serbs and Muslims, but most particularly Serbs, were sensitive to relative proportions of ethnic population numbers. If this supposition is valid, then ethnic population numbers can be used as a direct measure. Ethnic competition indexed by demographic composition could be said to increase as the population proportions of the two groups come into balance. Dion (1997: 640) argues that an abstract mathematical model in which two groups are assumed to have an equal probability of tendency to violence will show that, as the proportions of the two groups come into balance, there will be more cases of group interaction and thus more potential situations of ethnic violence. This would apply whether groups were antagonistic towards each other or not. It could be argued that enhanced interaction is more likely to result in violence if the influence of inter-ethnic rivalry is added to the equation. Recognizing the mathematical artifact as a partial explanation, this analysis proceeded to consider the measurement of ethnic competition in terms of the balance of population numbers.

An Ethnic Competition Index Formula

Competition between Muslim and Serb would of course be at a maximum if each population in a given 'fundamental niche' were exactly balanced, i.e. each group represented 50% of the population. A simple index of competition could be devised by means of a ratio of the size of the lesser of the two groups to the size of the greater. Such an index would vary from 0 to 1 and would not indicate which ethnic group was in a majority; it would simply indicate competition. However, this index would not control for the presence of the third ethnic group, the

Croats or other ethnic minorities. Any measure of competition, therefore, has to incorporate and control for the influence of the 'other' component. This can be done by weighting the simple index by the size of the smaller group as a proportion of the total population. An index of ethnic competition between Muslims and Serbs controlling for the presence of populations of other ethnic groups can be proposed of the form:

$$\text{Ethnic Competition Index} = \frac{\text{Min}(\text{Muslims, Serbs})}{\text{Max}(\text{Muslims, Serbs})} \# \frac{\text{Min}(\text{Muslims, Serbs})}{\text{Total Population}}$$

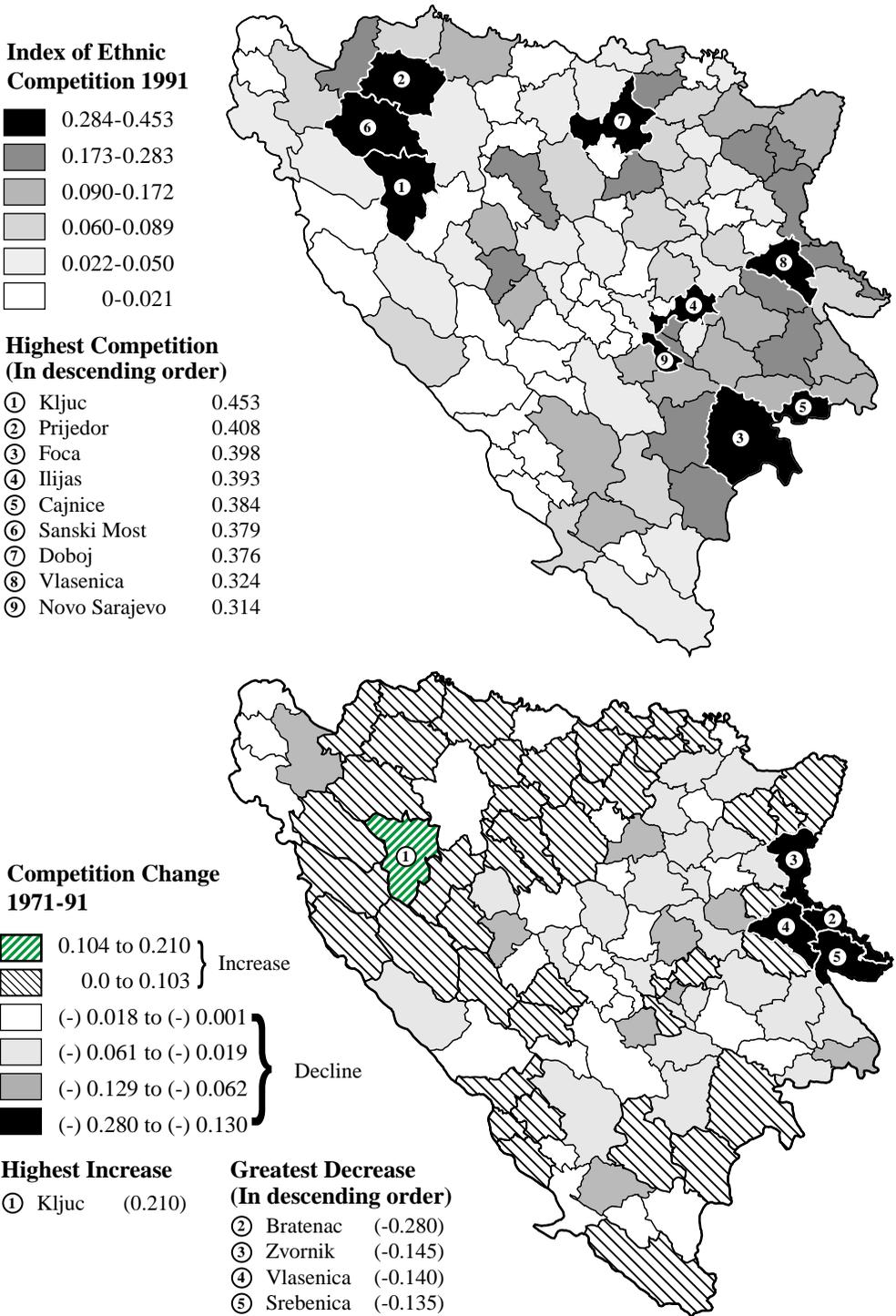
Where $\text{Min}(\text{Muslims, Serbs})$ = the absolute number of the smaller of the two ethnic groups. $\text{Max}(\text{Muslims, Serbs})$ = the absolute number of the larger of the two ethnic groups. Population = the total population of the opstina.

As the population of Muslims rises or falls in relation to a rising or falling Serb population, the ethnic competition index will rise and fall and will vary from a minimum value of zero to a maximum of 0.5, which will occur where the Muslim population exactly balances the Serb population and there are no other ethnic groups living within the opstina.

Using the Ethnic Competition Index

Bearing in mind that Muslims became clearly established as a 'nation' in the Yugoslav sense in 1971, the time-line of perceived competition and threat to the Serb population becomes the 20-year lead-up to the war from 1971 to 1991. Figure 4 maps the ethnic competition index by opstina for 1991 and shows the areas where the index grew or declined over the period between 1971 and 1991. Sustained pockets of high Muslim-Serb competition occurred within the same areas where Serb population was concentrated in the north (Kljuc, Prijedor, Sanski Most, and Doboje), in the suburbs and outskirts of Sarajevo (Ilijas, Illidza), and in the

Figure 4. Muslim-Serb Index of Ethnic Competition



eastern borderlands (Foca, Cajnice, Bratunac, Vlasenica).

In the first two of these clusters, ethnic competition intensified between 1971 and 1991. Here, then, were traditional Serb strongholds experiencing strong and increased ethnic competition. There is no doubt, therefore, given the operation of the 'demographic' key to government jobs and posts with political power and influence, that the foundation for severe ethnic tension must have existed between Muslims and Serbs in these areas just prior to the outbreak of war. In the terminology of ethnic competition theory these opstinas represented 'fundamental' niches in which there would have been significant 'niche overlap'.

In the third cluster in the eastern borderlands, while competition remained high it also declined in the same period. Here high concentrations of both Muslims and Serbs were to be found in 1991 (see Figure 2). The opstinas of Bratunac, Zvornik, Vlasenica, and Srebrenica showed the greatest competition declines. Ostensibly, these declines would suggest a waning of the potential of inter-ethnic conflict. However, these indices of ethnic competition do not chart the changing relative positions of the populations of Muslim versus Serb over the 20 years. That is, they do not show, for example, whether one group switched from being the subordinate group to becoming dominant over the other, or whether the domination of one group over the other increased. In the former case, the period of maximum competition will already have passed. In the latter case the status of the dominated group may worsen, the condition of maximum competition may have passed, and one of three consequences (Olzak, 1992) may have occurred, namely 'accommodation', 'exclusion', or 'violent resolution'.

The foregoing examples indicate the inadequacy of looking at the ethnic competition index alone and the need to develop a means

by which to articulate more comprehensively the demographic interplay of the two groups in each opstina. The demographic trends of Muslims and Serbs from 1971 to 1991 can be diagrammed as straight lines. For example, one trend scenario is shown in Figure 5(A). Here Serbs were the dominant group in 1971 and 1991 but were declining in population as the Muslim population was increasing. Of the 26 possible scenarios, 14 actually occurred. In eight of these scenarios, Serbs lost demographic position to the Muslims and these losses actually occurred in 90 of the 107 opstinas.¹⁷ In six scenarios, the proportion of Muslims declined as that of Serbs increased, but this occurred in only nine opstinas.¹⁸ Overwhelmingly, the Serbs were losing rather than gaining in relation to the Muslims.

An Index of Demographic Disadvantage

As a means to mapping the degree to which the loss occurred, an index of 'demographic disadvantage' for 1971 to 1991 is proposed. This gives a value in the range 0 to 200 and returns a negative value if the proportion of Muslims rather than of Serbs declined. In this latter case the index will become one of 'demographic disadvantage' for the Muslims.

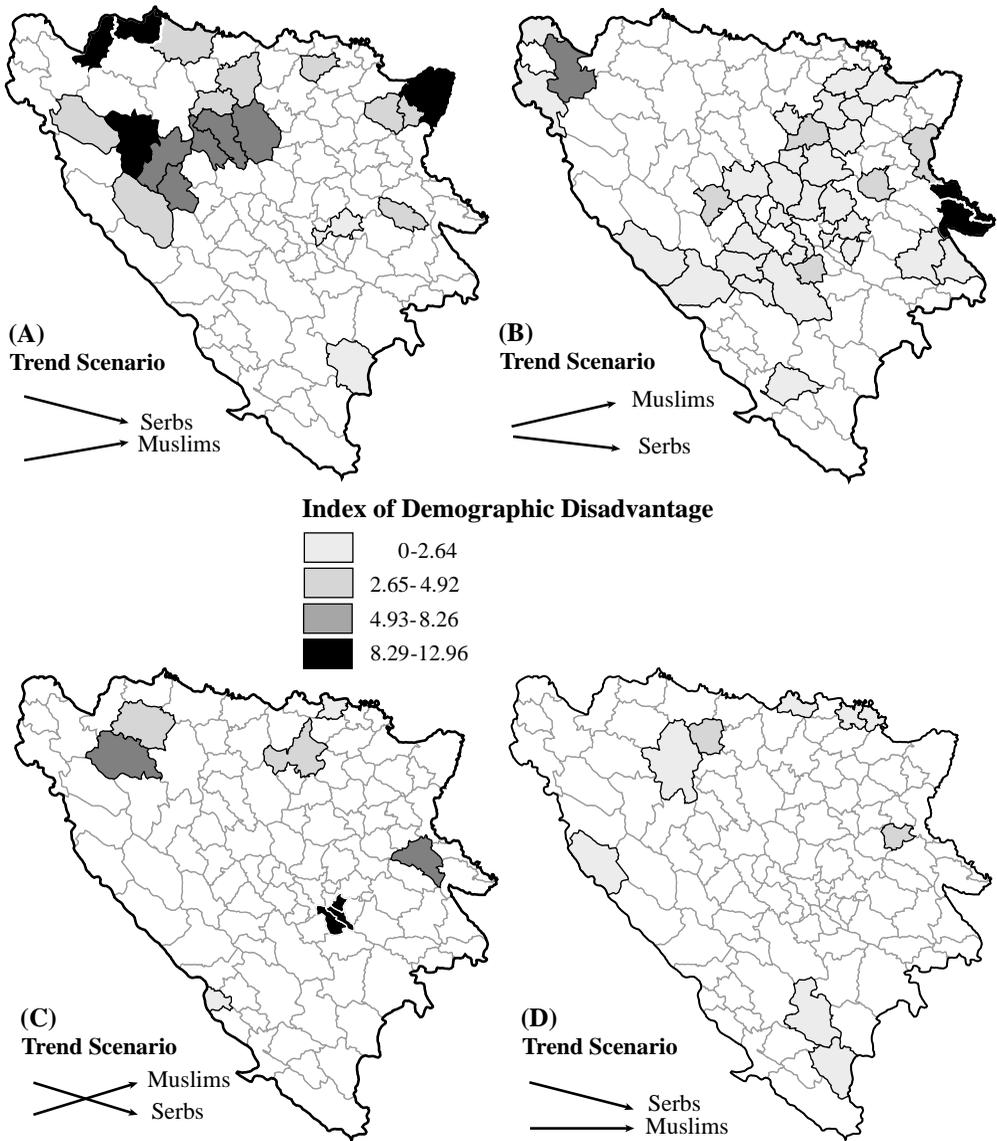
$$f \in d \frac{M_{91} - S_{91}}{P_{91}} n - d \frac{M_{71} - S_{71}}{P_{71}} n o \# \frac{S_{71}}{P_{71}} p \# 100$$

where M_{91} = the 1991 Muslim population
 P_{91} = the 1991 total population
 S_{91} = the 1991 Serb population
 M_{71} , P_{71} and S_{71} = the same population figures for 1971

¹⁷ The 1961 census is the baseline for the analysis of census data. In later years, additional opstinas were created. Hence, the number of opstinas is dictated by the number listed in the 1961 census. For later census years, the data have been aggregated back to the original 1961 opstinas.

¹⁸ In the remaining 8 of the 107 opstinas, either the Muslim or the Serb population represented less than 1% of the total population or decline in both the Serb and Muslims populations took place between 1971 and 1991 and exactly matched.

Figure 5. Index of Demographic Loss to Muslims 1971–91. Weighted by Serb 1971 % Population



In this index of demographic disadvantage, the number of Muslims in 1991 minus the number of Serbs in 1991 divided by the total population in 1991 represents the difference between the numbers of Muslims and Serbs as a fraction of the whole population in 1991. The same applies for the year 1971. In this way, the difference in ethnic

proportions in the two 'snapshot' years is calculated. By then subtracting the 1971 difference from the 1991 difference an index of the 20-year trend of these differences is obtained. This index is then weighted by the proportion of Serbs in the population in 1971 in order to reflect the magnitude of loss of advantage to Serbs.

Using the Index of Demographic Disadvantage

The opstinas were classified according to each of the eight trend scenarios that resulted in Serbs losing demographic position to Muslims. A separate map, selecting those opstinas that had experienced one of each type of trend scenario, was then generated. These maps were overlaid upon a map of the index of demographic disadvantage. Index of demographic disadvantage values for opstinas where a given trend scenario did not apply were therefore filtered out. For each opstina that fell within a given trend scenario, the level of demographic disadvantage is symbolized by the degree of density of the shading. Four types of trend scenario covering 81 or 90% of all opstinas in Bosnia and Herzegovina, and mapped in Figure 5, represent potentially inflammatory situations of inter-ethnic rivalry.

The two scenarios 5(A) and 5(D) show opstinas where the Serb population declined while the Muslim population increased or remained steady. In these situations, the growing strength of the Muslim population would have been perceived by the Serbs as a Muslim threat of demographic dominance. Areas where there was greatest loss of Serb demographic position were a cluster of opstinas around Kljuc, Bosanski Novi, Bosanska Dubica, and Bijeljina. It is logical that these same areas would show increased 'ethnic competition' (see Figure 4). Note, however, that these areas are only a subset of those showing an increase in the index of 'ethnic competition', since this index does not show which ethnic group is dominant.

Scenario Figure 5(C) maps those areas where a switch from Serbs being dominant to Muslims becoming dominant occurred, and this situation again is not accounted for by use of the index of ethnic competition. Although ethnic competition for 1991 was higher than in 1971 in these opstinas, it was

only a net increase. Ethnic competition would have passed a maximum at the point of crossover sometime during the 20-year interval. For the Serbs this experience of relinquishing the dominant position would have been a 'worst-case scenario'. This switch, coupled with the greatest loss of demographic position, occurred in Sarajevo. Elsewhere, significant instances of this scenario took place in Vlasenica, Dobo, Prijedor, and Sanski Most.

Scenario 5(B) shows the commonest form of Serb to Muslim demographic loss, which happened in the Muslim population strongholds of central Bosnia and the 'Bihac pocket'. From the outset in 1971 the Muslims were the dominant group, while the Serbs, as the subordinate group, declined. Here ethnic competition decreased (see Figure 4) and the escalating circumstances that form the elements of 'ethnic competition' theory were absent. In this setting, Serbs would have perceived their ethnic position as bad and getting worse to the point where they would be in danger of becoming a vulnerable minority within dominant Muslim areas. Srebrenica, Bratunac, Zvornik, and Bosanska Krupa were the opstinas where this demographic trend took place most strongly. Competition theory, built upon the tenets of a behavioral-ecological model, would suggest that one of the three alternatives of accommodation, exclusion, or violent resolution would occur.

Demographic Trends as a Precursor of Violent Conflict

If demographic indices of ethnic competition and population trends, causing shifts in the majority status between Serbs and Muslims, are bellwethers of violent conflict, then there should be some spatial association of the events of the Bosnian war with the demographic patterns that predicated it. Reference to the many accounts of the political actions

that led to the dissolution of Yugoslavia, the rise of virulent nationalism, and the record of the Bosnian war suggest that the progenitors of violent ethnic conflict operated at three levels (Ali & Lifschultz, 1993; Bennett, 1995; Cigar, 1995; Glenny, 1994; O'Ballance, 1995; Owen, 1995; Silber & Little, 1996). At the highest level there were the expansionist aspirations of Tudjman for a Greater Croatia and Milosevic for a Greater Serbia. Within Bosnia there was the ethnic nationalist power struggle of Bosnian Muslims under Izetbegovic, Bosnian Croats under Boban, and Bosnian Serbs under Karadzic. At the local level, ethnic nationalist allegiance and sentiment existed as an almost dormant entity that simply had to be ignited by non-local political interests (O'Ballance, 1995: 2). Therefore it could be argued that, as the Bosnian war developed, the pattern of violent events could be explained principally as the result of two forces. First, there were the strategic interests within the war theater of the external and internal nationalist power structures. Second, these strategic interests would have been dependent, in part, on the demographic histories that disposed local populations to support the military effort.

Empirical investigation of an association between demographic histories and the pattern of inter-ethnic violent conflict requires a record of the collective conflict events, known as 'event analysis'. Olzak (1992: 49) notes the particular strength of event analysis as allowing 'diverse forms of collective action to be measured and compared because observations are collected in commensurate dimensions'. 'Events', she defines, citing Paige (1975) and Tilly (1978), as 'non-routine collective and public acts that involve claims on behalf of a larger collective'. In other words, a social mobilization takes place in direct response to some collectively perceived need for change. In the case of the Muslim-Serb conflict, it was a perception of

increasing competition for territory and resources aggravated by an expanding Muslim population and a shrinking Serb one.

Sources of event data are traditionally police records, municipal records, or newspapers. An ideal dataset would include: the location of an initial collective action, the ethnicity of the groups involved, the instigation and the target of the collective action, the duration of the event, whether violence occurred, whether formal organizations were involved, the number of participants, and whether there were any links between events. Clearly, these types of data are more readily available in stable democracies with a free press, and ethnic conflict theory has most profitably been explored in such settings (see the work of Burstein, 1985; Jenkins & Eckert 1986; McAdam, 1982; Olzak, 1992; Spilerman, 1970, on immigration and race in the United States). Record-keeping and reporting are antithetical to the goals of warfare: rather, information blackouts and the propagation of misinformation obstruct accurate accounts. However, as supranational peace and security organizations attempt either to prevent or quell armed conflict, data-gathering and monitoring, if only *ex post facto*, will likewise be attempted. In turn, more sensitive appraisal of the social dynamics of war will be possible.

Discrete-Event Data Analysis

In this study, eight US State Department reports of 'war crimes in the former Yugoslavia' dating from August 1992 to June 1993 (US Department of State, 1992-93)¹⁹ were content-analyzed as approximations of discrete event narratives. The State Department reports detail in excess of 500 discrete

¹⁹ An additional analysis of event data was done on war-crime files published in the Helsinki Watch reports (Helsinki Watch, 1992, 1993). This analysis revealed a set of events which paralleled the US State Department data.

events. Incidents involving hostile action by Serbs, in which the target of the action involved Muslims²⁰ or the reverse with Muslims targeting Serbs, between September 1990 and 1993 were evaluated based on the number of events in each opstina and on the severity of those events. These events ranged from individual acts of violence to detention or concentration camps characterized by high levels of systematically administered violence, torture, rape, or murder committed or sanctioned by civilian authorities. In this analysis, any event by a military group, including the JNA, was not counted. Violence by paramilitary groups was only counted if the narrative clearly stated that local civilians were included in the group committing the violent acts. The emphasis was thus placed on civil rather than military violence. Interpretations of the pattern of hostilities in the war, based on the strategic picture, identify a Serb campaign with two major goals. First, there was the campaign west of the Drina giving rise to Serb acquisition of territory down the eastern flank of Bosnia. This acquisition was inspired by the notion of a Greater Serbia and therefore expansion into territory contiguous to Serbia. Second, there was the northern campaign starting in Bijeljina, passing through the strategic 'Posavina corridor' and extending west to link up with the pocket of the ultranationalist Serbs of the Krajina district of Croatia immediately to the west of the Bosnian border. The pattern of hostilities reflects these two drives. Since these data extend through the first year of the war, they also represent the strategic military dynamic of the war. In these areas, data showing the pattern of points of civilian violence are therefore masked by the military campaign. An ideal dataset would have been a record of the locations and severity of real 'flash point' events at the beginning of the war. Despite

²⁰ In many cases, Serbs attacked communities of mixed Croat and Muslim ethnicity.

the incompleteness of these data there is a significant Pearsonian moment correlation of 0.45 at the 0.05 level of probability between the distribution of towns and cities where 'these discrete events' occurred and degrees of ethnic competition in 1991. The correlation between inter-ethnic hostilities and the change of Serb population 1961–91 of -0.24 was also found to be significant at the 0.05 level of probability. In other words, inter-ethnic violence was more likely to occur in areas showing a large loss of Serb population. Correlation between violence and the 1991 Serb percentage of the population did not show a significant relationship.

The finding that Serb majority areas may not have been strongly associated with violence seems contradictory. O'Ballance notes:

The main internal threat came from irregular Serb militia groups scattered throughout northern, eastern and western parts of the republic, based on Serb-majority areas and usually giving nominal allegiance to Karadzic's SDS (the Bosnian Serb Nationalist Party), but with as yet little centralized organization. (1995: 29)

However, there may be no contradiction if the 'neighborhood' effect is taken into account.

To this point, the study has been built upon the assumption that the theater of inter-ethnic rivalry manifests locally within the opstina as a functional entity. Only to the degree that the 'ethnic key' to local government jobs operated at this level is this assumption valid. Otherwise it is clear that local consciousness of demographic trends must surely have extended beyond the bounds of the immediate opstina and that there would have been a 'neighborhood' effect. Areas where Muslims were demographically in strong competition with Serbs, and where such areas were in close proximity to Serb strongholds, would be prime candidates for attack, as Serbs would see these as areas where Muslims were

demographically threatening Serbs. Banja Luka is just such a case. Although in 1991 the city itself was populated principally by Muslims, the Serb population in the opstina as a whole was 55%, while the Muslim population was 15%, and the Bosnian Serb leader Radovan Karadzic declared the city the capital of a separate Serbian Bosnia in March 1992. In the adjacent opstina of Prijedor the index of ethnic competition in 1991 was 0.4 or 82% of maximum (see Figure 4) and the index of demographic loss, while not in the highest range (see Figure 5), entailed a switch from a majority to a minority of Serbs. It was in this opstina that the most notorious concentration camps of the war were located, at Prijedor and Omarska. Surrounding Banja Luka were other opstinas for which we have few reports of hostilities or atrocities but which scored high on demographic loss for Serbs (see Figure 5) and in which much physical damage is evident. Other opstinas showing high levels of ethnic competition and significant demographic loss, all of which threatened the Serbs, and in which Serb hostilities against Muslims took place, were those that made up parts of Sarajevo (Illidza and Novo Sarajevo), as well as Vlasenica, Doboje, Srebrenica, and Bratunac (compare Figures 4 and 5).

The Pattern of Demographic Histories and the 1995 Ceasefire Line

The ceasefire line established in 1995 was the culmination of a period when the Bosnian Serb forces were losing considerable ground to Croat forces and the Serb-held territory in Bihac and western Bosnia had been lost. Figure 6 superimposed the ceasefire line on the distribution of the index of ethnic competition. Analysis shows that 24% of those opstinas through which the ceasefire line passed had ethnic competition index values

above 0.25 (50% of the maximum), while only 6% of opstinas away from the ceasefire had index values above 0.25.

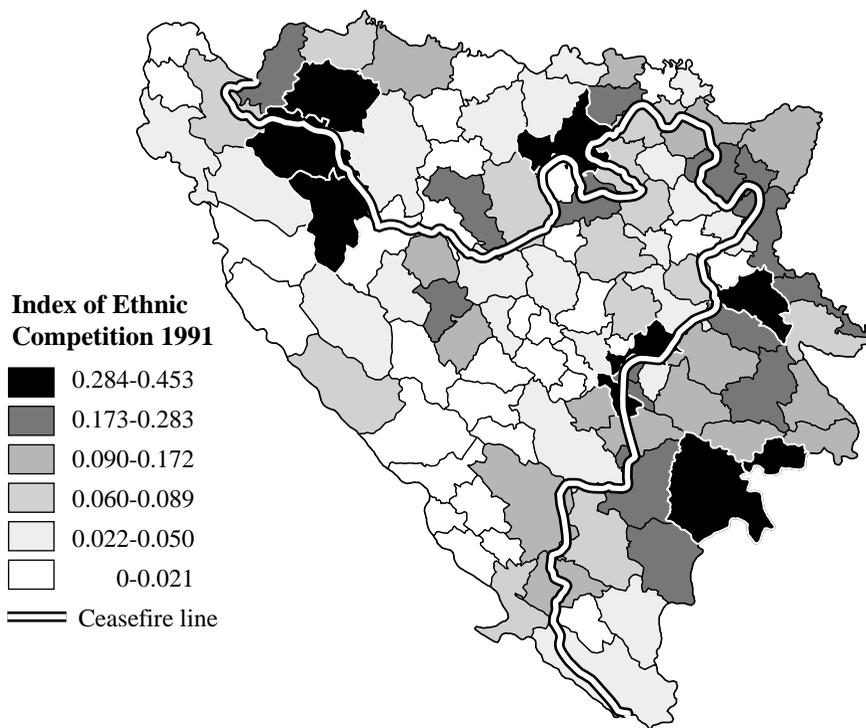
Conclusion

The foregoing analysis seeks to examine the applicability of ethnic conflict theory as a tool to gaining a more insightful interpretation of what the demographic conditions are that lead to ethno-nationalist war. Central to the argument is the idea that, when ethno-nationalism becomes a political force, demography matters. That is, the relative numbers of rival ethnic populations within a disputed territory becomes an issue of concern. This concern and the territory within which it is manifest, the study contends, can have a local dimension. It is a manifestation that can be mapped. Consequently, a geography of ethnic competition can be developed. In addition, the study takes ethnic conflict theory one step further by considering how different scenarios of demographic change, scenarios that can be mapped, might relate to the potentiality for conflict.

These scenarios show any demographic disadvantage of one group at the expense of the other. The threat of decline of one group at the expense of another further aggravates the pressure for inter-ethnic conflict. The conjunction of worst-case scenarios and ethnic competition shows some linkage of association with hostilities in three clusters of municipalities, in the north around, but not including, Banja Luka, in the east along the Drina valley, and in the suburbs of Sarajevo.

A key assumption of the study was that the opstina, labeled a municipality but equivalent in area to a small US county, 'constituted an identifiable, bounded system of information and social action' (Olzak, 1992: 68). As such, therefore, the opstina was clearly only an approximation, especially when considering the event history data that

Figure 6. The 1995 Ceasefire Line between Muslim–Croat Forces and Serb Forces and the Index of Muslim–Serb Ethnic Competition



overwhelmingly reference actions taking place within towns and cities. This data limitation raises another important issue for further study. Occasionally in the literature about the war, the observation is made that the Muslim population of Bosnia tended to be urban. If in fact the Muslim population comprised more city dwellers than the rival Serb population, then there might have been an urban–rural stratification which, in turn, might have implied economic stratification or class distinction, a topic curiously absent from the literature on the social, economic, and political structure of prewar Bosnia.

Even though there are ample examples around the world, past and present, of the importance of demography and ethno-nationalist conflict, the value of demographic trends as a bellwether requires empirical confirmation. The study has sought to show that

the geography of prewar demographic potential for conflict between Bosnian Serbs and Muslims reflects the geography of hostilities between these groups in the war that followed. Content analysis of State Department reports on the geography of the hostilities for the first year of the war has shown that there is a statistically significant association between the pattern of ethnic competition indexed demographically and the pattern of those hostilities. Of course, this finding has to be carefully qualified. Hostilities data clearly reflect military strategic objectives at the national or supranational level rather than local internecine hostility. Even though every effort was made to exclude military incidents, the data are not necessarily a precise record of purely local internecine hostility flash points. Perhaps, in the case of Bosnia, when a more complete history is

finally recorded, such data or something approaching them will become available. However, if action to prevent conflict is to occur, it cannot wait for long-term historical confirmation. Rather it is to be hoped that if the ever-expanding numbers of field observers around the world in trouble spots were consciously to compare their field experiences with Olzak's demographic model of ethnic strife, then empirical observation might come to support the diagnostic value of this approach.

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