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Newsworthy Spaces: The Semantic Geographies of Local News

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ABSTRACT

This paper explores the semantic geographies inscribed by the news-making process. Previous research suggests that the commercial value of news audiences may contribute to the selection of places deemed worthy for reportage by publishers and editors. For example, the “newsworthiness” of different municipalities, or the ability of specific cities to attract news coverage, has been found to be related to financial aspects of municipalities as news markets. This study examines the amount of news attention given to local cities in a metropolitan area, and the geography that is created by the act of mentioning places in media texts. I utilized an automated content analysis of local news articles from 1999-2007 from a large metro daily newspaper in Phoenix, Arizona. Names of local cities were identified and mapped by their prevalence and co-occurrence in these newspaper articles. Results showed that per-capita rates of news coverage were positively correlated with city per-capita incomes, but not related to median age, total population, or proximity to the newspaper’s main office. Cities mentioned together within news articles also exhibited high rates of spatial autocorrelation; cities were more likely to be mentioned with neighboring cities than distant cities. I contend that the process of news production is also a cartographic process, since journalists are involved in representing places—and implicitly mapping places—through the semantic geographies of their media texts.

INTRODUCTION

I ARGUE IN THIS PAPER THAT THE MEDIA ARE PRODUCERS of geographic knowledge. By including and excluding places—based on the ambiguous quality of “newsworthiness”—the mass media creates a hybrid geography that reflects both real space and non-spatial characteristics of news consumers. The creation of news content is a selective process that can be partially understood by the spatial pattern it creates. This article will present

an example of the spatial pattern of local news selection by a large metropolitan daily newspaper, *The Arizona Republic*. I show that cities, as bounded spaces semantically identifiable in news articles, are mutually networked and mapped by their media representations. Adjacent cities that are named concurrently may strengthen their adjacency in “media space.” Additionally, I describe how a city’s demographic characteristics may be related to the overall amount of coverage it receives.

PLACES AND THE NEWS

The newspaper contains a wealth of geographic information (Burgess 1985; Vujakovic 1998; Rantanen 2003). These texts function as representations of entities, events and places, meaning that they are not value-neutral or objective (Hillis 1998). Newspapers are both *in* and *of* places—they reside in places while attempting to describe them. The spatially biased nature of the news production process is reflected in studies of international news flows (Kariel & Rosenvall 1984, 1995; Wu 1998; Van Belle 2000) and national news origin and coverage patterns (Walmsley 1980; Kariel & Rosenvall 1981; Brooker-Gross 1983; Gasher 2007). Unlike other news media, newspapers are generally regional, serving subscribers in defined markets and producing news that is relevant to those readers. News flows and patterns of coverage have not been particularly well studied at finer scales, such as within regions or cities. There is some research, however, linking media to the city as a place and to the creation of place (Parisi & Holcomb 1994; Martin 2000, 2003) and city images (Avraham 2000).

The media represent space as text, and inscribe a geography of the places they cover. The mass media are social producers of reality (Adoni & Mane 1984), and discourses in the mass media contribute to the creation and evolution of place identities (Burgess 1985, 1990; Zonn, 1990; Martin 2000). Journalism, like many forms of discourse, is a means to articulate prevailing values. Rather than reflecting reality, the journalistic process contributes to creating it (Martin 2000). Journalists draw from their own experiences of popular culture and a broader system of social relations and structure that is outside the media (Gamson *et al.* 1992). Place is thus socially constructed through processes of personal interaction, linguistic representation, emotions, attitudes, and lived experience, which all combine to create a “sense of place” (Agnew & Duncan 1989; Lefebvre 1991). Discourse, through language, allows for description of place, but also definition and construction of place (Barnes & Duncan 1992, 8). The content delivered by the mass media provides the infrastructure for people to construct images of place and their own mental maps (Gould & White 1986; Parisi & Holcomb 1994). This content is derived from other places, and when not supplemented by first-hand information, is then conceptualized as the objective reality of a place for non-residents (Burgess 1985).

The “semantic geography” of discourse is the actual process of situating people and places in space and in relation to one another (Dixon & Hapke 2003, 142). Just as all constructs are dependent upon their various contexts, place representations in

the news media are embedded within a network of relations with representations of other entities, events and places. The second part of this article attempts to map some of these relations of representation between places. The semantic geography of local media discourse—the mental maps that the newsmakers create—reflect both city sites, or absolute locations, and situations, or relations in context (Rantanen 2003). Both the site and situation of places is involved in newspapers’ “construction of locality” (Burgess 1990, 142).

News coverage is also a process of place interpretation. Coverage inevitably involves categorization or stereotyping of places, such as constructing the “inner city” as a place of social deviance (Burgess 1985; Martin 2000; Avraham & First 2006). Places, in some instances, even form “media templates,” whereby people associate the names of places with an issue or ideology. In these cases, place can function as a form of rhetorical shorthand, the “dominant analogy” to symbolize something that would otherwise require longer description (Kitzinger 2000, 75).

Previous content analyses of news coverage and news flows suggest several inherent news production biases in coverage of places. These biases include proximity (to both news bureaus and large cities), socioeconomic status, and the presence of institutions. Globally, news flows focus on the United States (Wu 1998). In two examples of coverage of natural disasters, event proximity to New York City was a predictor of the amount of coverage the event received in United States media (Adams 1986; Van Belle 2000). Additionally, a nation’s perceived “eliteness” in one study was highly related to coverage amounts by major news organizations (Kariel and Rosenvall 1984). Nationally, news organizations can be both highly provincial in their regional coverage and focused on events and a few high-profile non-local locations (Walmsley 1980; Brooker-Gross 1983). A content analysis of different newspapers across Canada showed a hierarchy of national to local coverage patterns (Kariel & Rosenvall 1981). Higher numbers of national institutions and lower crime rate, in another study, were linked to greater amounts of media coverage (Avraham 2000). At the local level, events have been shown to receive greater amounts of coverage if they were sponsored by business groups and were located centrally within cities (Oliver & Meyer 1999).

Beyond the production of news, research indicates news consumption can vary based on the demographic characteristics, socioeconomic status, and location of news consumers. Frequency of news consumption has been shown to correlate positively with length of residence, as well as age (Frey Meyer 2006). More highly educated people receive greater proportions of their news from newspapers, and newspaper readers have higher levels of institutionalized political participation (McLeod *et al.* 1999). An experimental study of university students showed that information from local stories was more easily recalled than information in non-local news stories (Donnelly 2005).

JOURNALISTIC PRACTICE

As representations, newspaper texts are not objective in their coverage. The media have a finite capacity of coverage, meaning that some events, people and places will always be excluded. Some of the mechanisms of journalism—beats, filing deadlines and communication technology—are part of a process that is inherently biased toward certain people, places and events through inclusion and exclusion (Tuchman 1978; Gans 1979; Fishman 1980; Oliver & Meyer 1999; Earl *et al.* 2004). These decisions are based on judgments of “newsworthiness,” which are connected to the relevance of events and places to target audiences and the accessibility of advertisers to that audience (Gasher 2007). In other words, the news values that define newsworthiness are linked to newspaper audiences. By deciding what places to cover and under what contexts to cover them, journalists construct and define places. The places included in news are part of an “information space” that contributes to the cognitive maps of their audience.

The process of news-making is tied to consumers and the market interactions between news producers and news consumers. In practice, the resource allocations of newspapers will determine which events are detected and reported. News beats are the result of this resource allocation problem. Fishman (1980, 33), in a study of a California newspaper, found that even when no events of interest occurred, the assigned reporter “was still responsible for writing something about the beat.” Even within beats, “reporters strategically and systematically expose themselves to only a few sources of information” (Fishman 1980, 33). Beats, at the same time, are selected to cover official institutions where news “may be expected to be found” (Tuchman 1978, 21). Within beats, journalists rely on a diverse pool of sources, but for stories outside of established beats, they rely on very few sources who tend to be more visible and elite (Berkowitz & Beach 1993).

This analysis will describe the semantic geographies constructed by the news production practices of a large metropolitan newspaper. First, I will provide evidence that population size does not appreciably relate to levels of news coverage, although one characteristic of newspapers’ audiences—per-capita income—is positively associated with newspaper coverage. Second, I will explore some of the features in the semantic geography created when multiple places are concurrently mentioned in the same article. Patterns of association arise when places are mentioned jointly, and mapping cities that are mentioned simultaneously provides clues to their relationships with each other. The network of relations that results may be influenced by both physical proximity—cities that are closer together are mentioned together more often—and the pre-existing mental maps of news producers.

STUDY SITE AND METHODS

Metropolitan Phoenix is a vast and rapidly growing conurbation in the western United States. The region has experienced outward-oriented urbanization, with formerly rural

towns in the urban periphery expanding into bedroom communities while existing municipalities push their boundaries outward by annexing agricultural and desert lands and transforming them into low-density residential and commercial developments (Keys *et al.* 2007). The growth of the cities surrounding Phoenix has created a sprawling polycentric conglomeration composed of most of the 34 incorporated areas in its Metropolitan Statistical Area (Gober 2005; Keys *et al.* 2007). As of July 2005, the region had an estimated metropolitan population of nearly 4 million. The urban core of downtown Phoenix is the least developed of any large city in the U.S., partly as a result of the region's economic dependence on residential development in the cities of the urban fringe (Gober 2005). My analysis reveals patterns of media coverage of Phoenix's peripheral municipalities, and describes some of the relationships between cities in this dynamic metropolitan area.

As a result of its rapid growth, the Phoenix area hosts comparatively few local news outlets (Talton 2008). The region is served by two large daily newspapers, *The Arizona Republic* and the *East Valley Tribune*. The *Republic* is by far the larger of the two papers, with an average daily circulation of 433,731 to the *Tribune's* 99,711 (Audit Bureau of Circulations 2007). The *Republic* ranks in the top 10 U.S. newspapers by average daily circulation and is also the largest local newspaper holding of the Gannett Corporation, a national media conglomerate that publishes *USA Today* and many other newspapers. The *Republic* features fifteen separate community inserts aimed at smaller regions within metropolitan Phoenix, but it also includes a general "Valley & State" section that, along with its front page, is aimed at delivering more newsworthy local news across all editions. This study examined only news items in the front section and the "Valley & State" section.

The first phase of this study uses quantitative content analysis as a basis for data retrieval and coding. Summary statistics on aggregate news coverage of cities are then presented, followed by statistical measures of the co-occurrence of cities within news articles in the form of a non-parametric correlation coefficient. This measure of the co-occurrence of cities within articles was then mapped and analyzed for rates of spatial autocorrelation.

Quantitative content analysis is a systematic method for examining "symbols of communication" that assigns numeric values to these symbols to allow for statistical analysis (Riffe *et al.* 1998, 20). It can be used to describe the manifest content of communication and relationships between communication symbols. In practice, quantitative content analysis allows for description, summarization and analysis of large volumes of textual data that would not be possible at the individual level (Neuendorf 2002). This method is a simplified form of text mining and ontology generation, an active area of research in information science (e.g. Mitra *et al.* 1999; Gravano *et al.* 2003; Newman *et al.* 2006).

This study uses the individual newspaper article as its unit of analysis. Articles were retrieved using iterative search queries of headlines, datelines and lead paragraphs in an online newspaper database. Headlines and lead paragraphs are often used as proxies for the full content of news articles, and are considered effective substitutes for generalized patterns of content (Althaus *et al.* 2001). This study sampled only articles from the front and local news sections, the majority of which are “hard” news stories in an inverted pyramid style with a summary lead paragraph (Itule & Anderson 2003, 44-45). Articles from wire services, which generally cover non-local events, were excluded. News articles within other sections, such as opinion/editorial, sports, business and lifestyle, were not included in the sample. Community insert sections that are not distributed to all newspaper subscribers were also not included in the sample. Searches confined to headlines, datelines and lead paragraphs were used solely in the sampling phase. After sampling, the full text of each article was included in the coding phase of the analysis.

Full-text content of *The Arizona Republic* is available online beginning in 1999 from Access World News’ Newsbank NewsFile Collection. For this study, news articles published from January 1, 1999 to December 31, 2007 were sampled if they contained the name of a municipality in the Phoenix Standard Metropolitan Statistical Area in their headline, dateline or lead paragraph.¹ Names of municipalities that were polysemic with other common English words² or that shared a name with another regional entity³ were excluded, as were very small rural cities.⁴ As mentioned above, the city of Phoenix was also excluded from the search, since some articles referred to the entirety of the metro area as “Phoenix” (see Figure 1 for a map of included cities). In all, 27 municipalities were included in the sample.

The sampling method yielded a corpus of size $N = 13,712$ news articles. These cases were then imported into Atlas.ti, a textual data analysis software package, for content analysis. City names in the full text of each article were assigned independent codes using an automated coding process within Atlas.ti. Articles that contained the capitalized full name of a city anywhere in their text were coded as mentioning that city. Articles were also coded by year of publication. A table listing the cities cited in each article was then exported into SPSS, with each article assigned an ordinal variable (cited/not cited) for each city. To test for correlations with each city’s aggregate citations, summary values for population, median age and per-capita income from the 2000 Census were obtained for each sampled city (U.S. Census Bureau 2001), as well as 2005 population estimates (U.S. Census Bureau 2006). In addition, the municipal government center, or main administrative buildings, for each city were plotted as points in ESRI’s ArcGIS. Distances between municipal government centers and downtown Phoenix—the location of the *Republic’s* main office—were calculated to test for proximity factors in the total amount of news coverage for each city.

To test for distance-decay relationships between cities that co-occurred in the same news article, a Spearman rank correlation coefficient (ρ) calculated for each pair of cities. Spearman's *rho* is a nonparametric bivariate descriptive statistic appropriate for ordinal variables. Values range from -1.00 to 1.00, and indicate the direction and strength of a statistical relationship between two variables (Lewis-Beck *et al.* 2004, 28). Spearman correlation coefficients ranged from -.13 to .40 with a mean of .02 and a standard deviation of .06. Distances between municipal government centers were also calculated as spatial weights for tests of spatial autocorrelation. Some error in the autocorrelation statistics is to be expected based on the point-to-point weighting method chosen, since city boundaries are highly irregular in both shape and area. Point-to-point spatial weights were chosen because contiguity measures would not account for all cities in the sample, since most cities on the edges of the Phoenix metropolitan area were not contiguous with their neighbors. GeoDa (Anselin *et al.* 2006) was used to compute Moran's I values—a statistic measuring synoptic spatial autocorrelation—for each city's news association variable. Moran's I values range from -1 to 1, and measure whether the value of a variable at one point is significantly related to the values of surrounding points, or whether values cluster in space.

RESULTS AND DISCUSSION

Quantity of News Coverage

Average numbers of articles citing each city between 1999 and 2007 were highly associated with the total population of each city in 2005 ($R=.83$, $R^2=.68$, $p < .001$). This correlation is not terribly surprising, however, given the large variation in population sizes between cities in the Phoenix metropolitan area (see Figures 1 & 2). To control for this variation, per-capita news coverage rates were calculated by dividing the total number of articles citing each city by that city's estimated population in 2005. Figure 3 shows the pattern of per-capita news citations across the Phoenix area for the 1999-2007 period. The northeastern edge cities of Cave Creek and Carefree both had the highest per-capita citation rates (.059 and .043) while the southeastern edge cities of Casa Grande, Coolidge and Eloy had the lowest per-capita citation rates (.002). Tempe, Mesa, Scottsdale and Glendale rank in the top quartile in terms of total population, but of these largest and most developed core cities in the metro area (Keys *et al.* 2007), only Scottsdale ranked in the top quartile of citation rates. This suggests that total population does not have a strong relationship to citation rates. There is, in fact, a trend toward a negative correlation between citation rates and total population across all cities in the sample, though it is not statistically significant.

Research has suggested that proximity to news bureaus or news representatives is tied to greater rates of news coverage at the regional, national and international scales (Walmsley 1980; Brooker-Gross 1983; Adams 1986; Avraham 2003). In this example at the metropolitan scale, proximity to Phoenix did not correlate with per-capita citation

Figure 1 Estimated 2005 populations of sampled cities in the Phoenix area. U.S. Census Bureau, 2006.

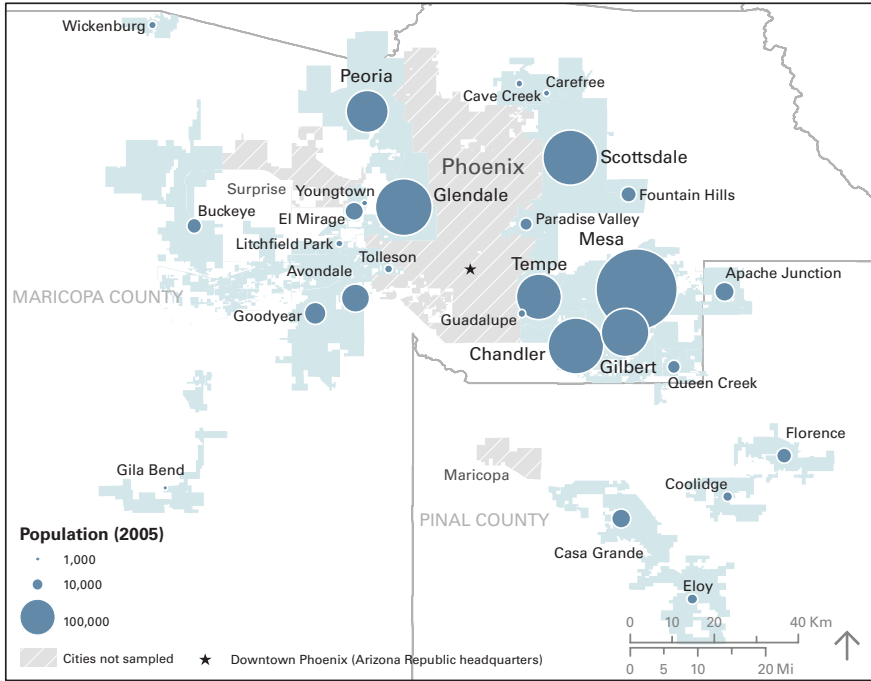
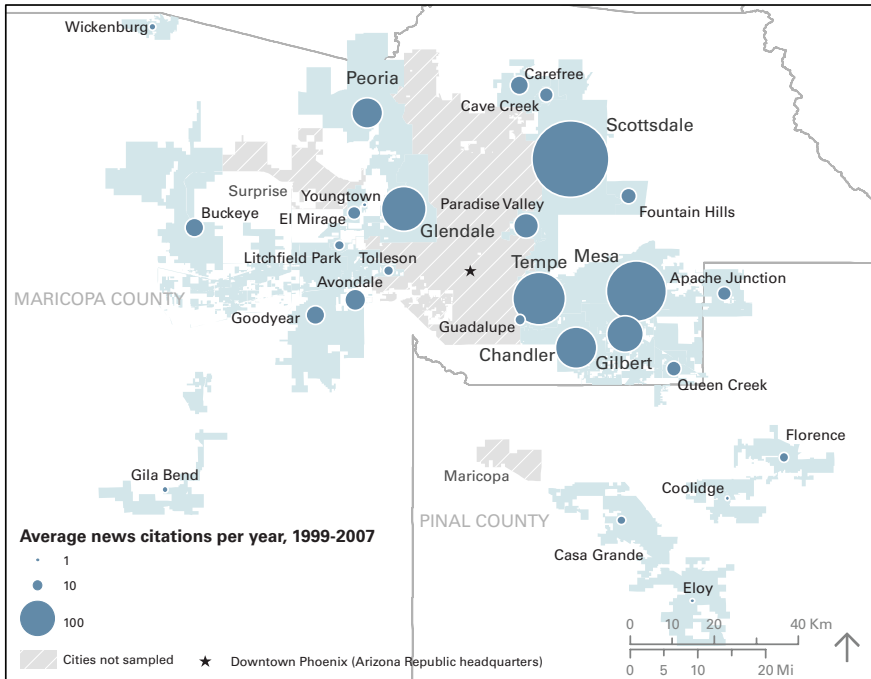


Figure 2 Yearly average number of articles citing cities in the Phoenix area, 1999-2007.



rates. Overall citations were, as expected, greater for more proximate cities, but that relationship disappeared when controlling for population.

Older people tend to be greater consumers of news, particularly in newspaper format (Freymeyer 2006). In this sample, there was no significant correlation between the median ages of each city and citation rates (see Table 1). Median age did trend toward a positive correlation, however. In contrast to many metropolitan areas, the Phoenix area hosts an elderly community largely composed of retirees who have relocated from other parts of North America (Gober 2005). As explained below, elderly residents' tendency to be greater media consumers (and potentially to receive greater coverage) may be hampered in Phoenix by the tendency of residents who have recently moved to have lower rates of media consumption (Freymeyer 2006). In addition, median age and per-capita income (mentioned below) are covariates in the Phoenix area.

The value of news audiences, in terms of their purchasing power, seems to be associated with higher rates of news coverage in the Phoenix area. A strong relationship between per-capita income and citation rates is evident by comparing Figures 3 and 4, maps of per-capita citations and per-capita income. Paradise Valley, Cave Creek, Carefree and Fountain Hills are neighboring suburban cities of Scottsdale, a large and relatively wealthy Phoenix suburb, and they are all also relatively wealthy. These cities, including Scottsdale, exhibit consistently higher citation rates than other cities. Scottsdale, being the most high-profile city in the region other than Phoenix, would be expected to have greater citation rates due to the number of institutions and businesses located there (Oliver & Meyer 1999; Avraham 2000, 2003). Indeed, Scottsdale did have the greatest number of citations, but its wealthy neighbors, who do not share its high number of prominent institutions, still exhibited greater than expected news coverage rates.

Table 1 Variables hypothesized to correlate with news coverage rates. Only per-capita income is significantly correlated with per-capita news citations.

Potential Correlates of News Coverage Rates

| Predictor | Dependent | R= | R ² = | p |
|---|----------------------|-------|------------------|-------|
| distance from downtown Phoenix ¹ | per-capita citations | .015 | .022 | n.s. |
| median age ² | | .364 | .133 | n.s. |
| total population ³ | | -.247 | .061 | n.s. |
| per-capita income ² | | .647 | .418 | <.001 |

¹ distance from *The Arizona Republic's* headquarters to municipal government centers

²2000 Census

³2005 population estimate

n.s.: not significant

Figure 3 News citations per capita from 1999 to 2007, based on 2005 estimated population.

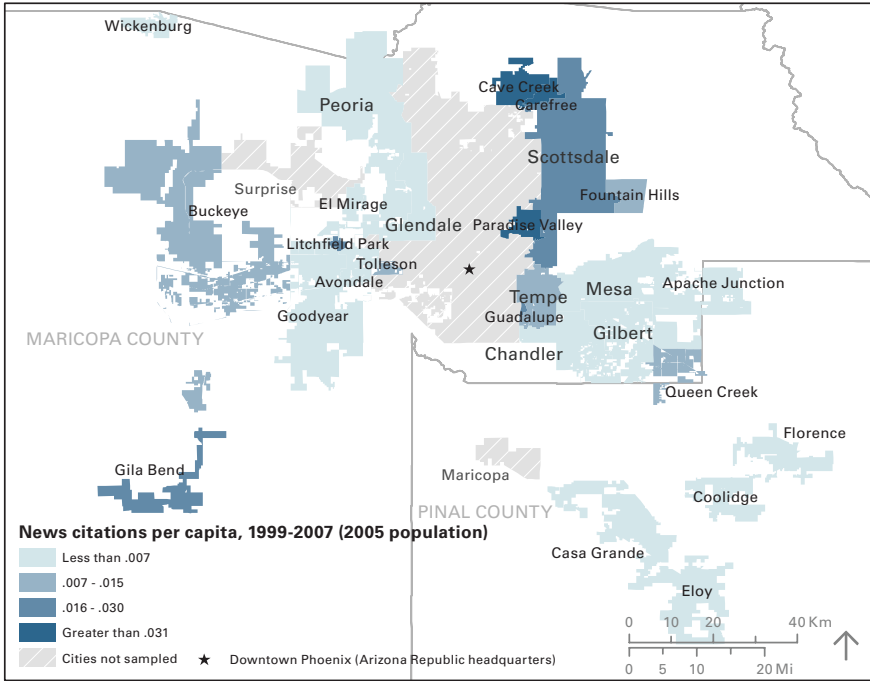
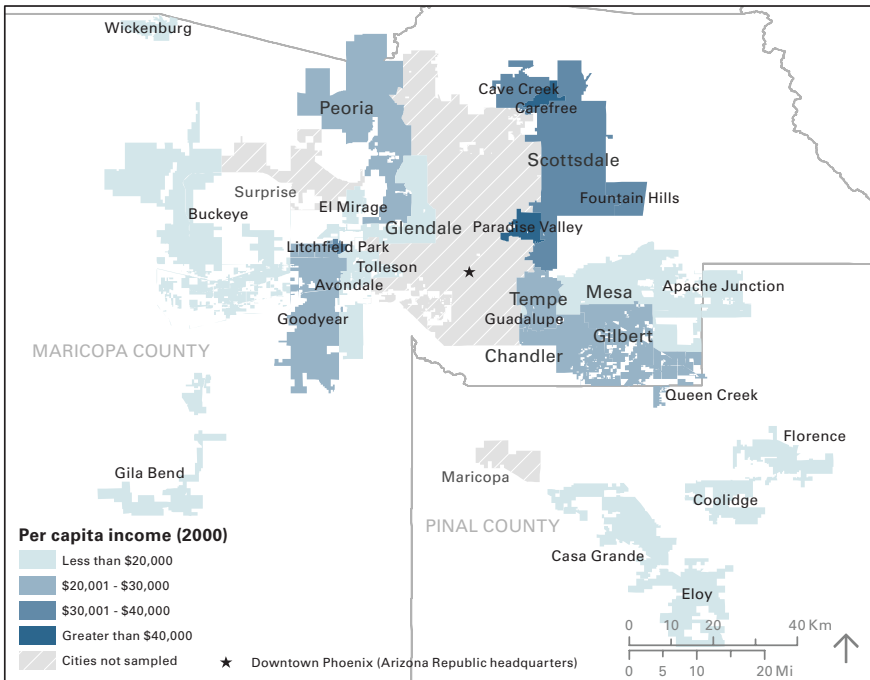


Figure 4 Per capita income in 2000. U.S. Census Bureau, 2001.



The relationship between per-capita income and citations is also clear across the Phoenix area. There is a strong positive and statistically significant correlation between per-capita income and citation rates (see Table 1). This positive relationship suggests that cities with wealthier residents, on average, received more local news coverage *per resident* than their neighbors with less wealthy residents. In effect, wealthy cities were more newsworthy than other cities.

Despite evidence that increased length of residence is tied to increased media consumption (Freymer 2006), *The Arizona Republic* seemed to adjust for the rapid increases in population across many of Phoenix's edge cities within the sampling period. Figures 5 and 6 show percentage increases in citations from 2000 to 2005. The populations of edge cities Buckeye, Goodyear, and Avondale grew by between 84 and 144 per cent between 2000 and 2005. These cities showed a concomitant increase in citations of greater than 400 percent. Nevertheless, there seems to be a lag in total citation increases, since per-capita citation rates decreased by greater than 50 per cent during the same period. In these instances, the news coverage map appears to lag behind population growth in edge cities, rather than preceding and anticipating such rapid growth.

Relationships Within News Articles

Examining the aggregate counts of places named in the news is a valuable first phase in analyzing coverage patterns, but it does not address *how* places are covered (Walmsley 1980) or how covered places are related in media discourse. Newspapers symbolically connect separate places—"tying" a city together by the associations that are formed (Parisi & Holcomb 1994, 379). Do the ties created between places weaken as distance increases? Within the Phoenix area, there does appear to be a strong relationship between neighboring cities and their associations in the news.

Figures 7-12 show these relationships for various cities in different parts of the metropolitan area. The city of Scottsdale (Figure 7), for example, is positively correlated with its satellite neighboring cities of Carefree, Fountain Hills and Paradise Valley. Scottsdale is negatively correlated with its neighboring large cities to the south, Tempe and Mesa, as well as cities on the far opposite side of the metropolitan area. Scottsdale's predominance in news coverage, and its relative isolation in co-occurrence with other cities, indicates a comparable independent identity in coverage by the media. In other words, when stories include mentions of Scottsdale, they will possibly mention its small satellite cities, but will be unlikely to mention other large cities in the area, especially if those cities are farther away. Tempe (Figure 8), on the other hand, is more associated with its neighbor Mesa to the east and Chandler to the south, while it is also highly associated with Guadalupe, a small municipality that lies mostly within its borders. Glendale (Figure 9), on the western edge of Phoenix's urban core, is highly correlated with its neighbors Avondale, El Mirage, Goodyear, Litchfield Park, Peoria and Tolleson.

Figure 5 Percent increase in news articles citing each city between 2000 and 2005.

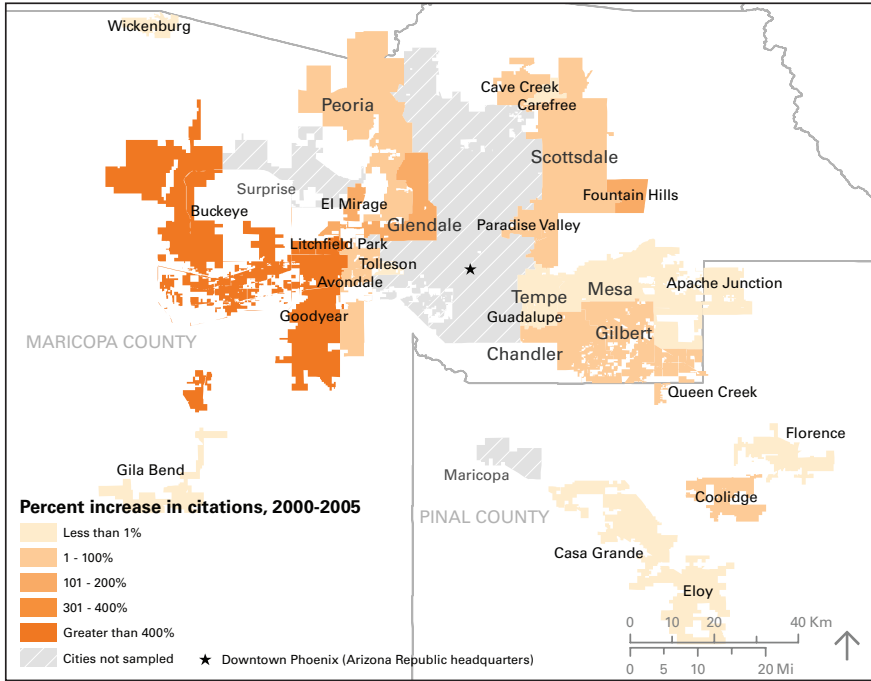


Figure 6 Percent increase in population between 2000 and 2005.

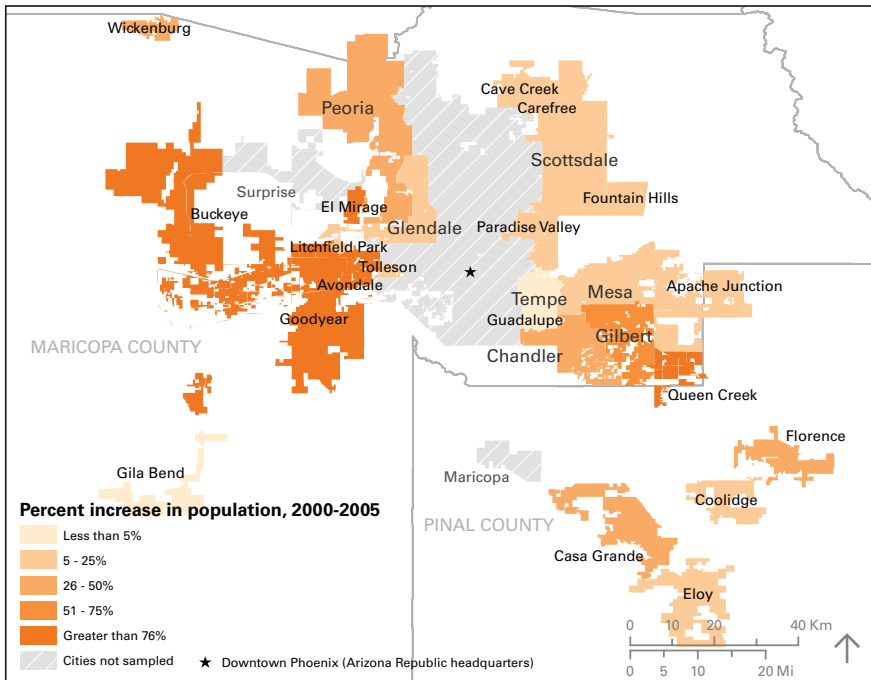


Figure 7 Cities associated with Scottsdale.

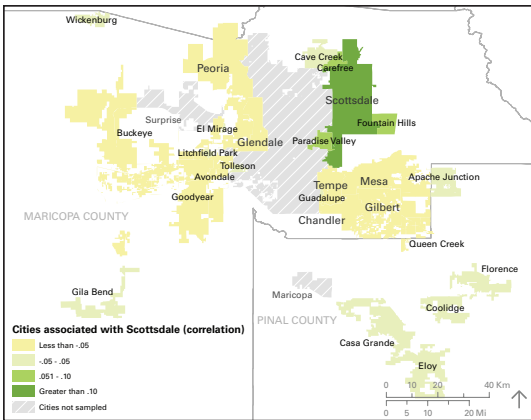


Figure 8 Cities associated with Tempe.

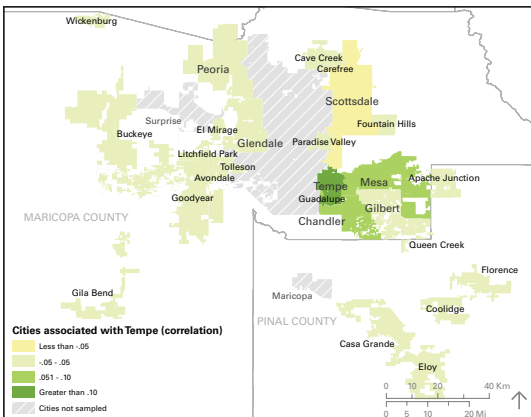
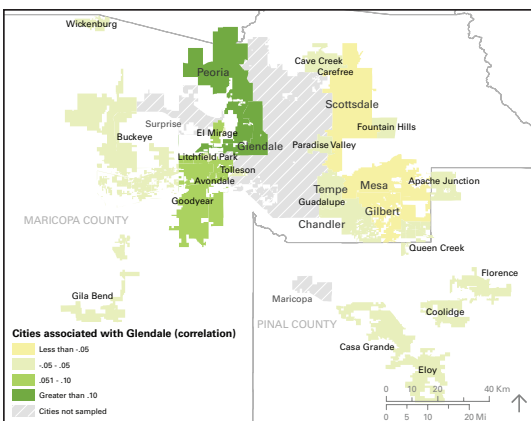


Figure 9 Cities associated with Glendale.



The peripheral cities of Buckeye and Queen Creek (Figures 11-12) exhibit even stronger relationships with their neighbors over greater distances than the core cities. These cities are less frequently mentioned in the news. As these correlations indicate, when peripheral cities are mentioned, they are more likely to be mentioned with other nearby peripheral cities.

The patterns created by mapping city co-occurrence in newspaper articles exhibit a measurable distance-decay relationship. Across all cases and each city coverage variable, neighboring cities were cited more frequently than distant cities. Out of 27 sampled cities, 16 had significant spatial autocorrelations at $p < .05$ (Figure 13). Based on their own independent correlation variables, the edge cities within and bordering Pinal County in the southeast had the highest significant Moran's I values. Casa Grande, Coolidge and Florence, in particular, showed highly positive spatial autocorrelation rates. This suggests that these cities are frequently cited together with other neighboring cities, rather than being cited independently. News articles about these cities may be predominantly regional, such that when cities on the urban fringe are mentioned they are contextualized with other nearby cities.

Figure 10 Cities associated with Mesa.

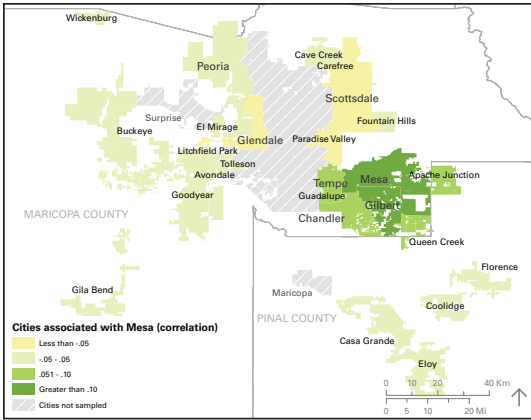


Figure 11 Cities associated with Buckeye.

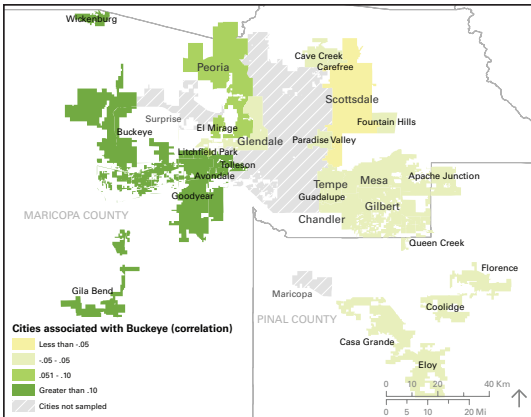
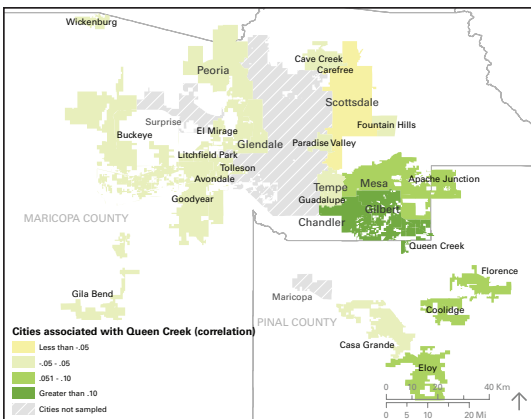


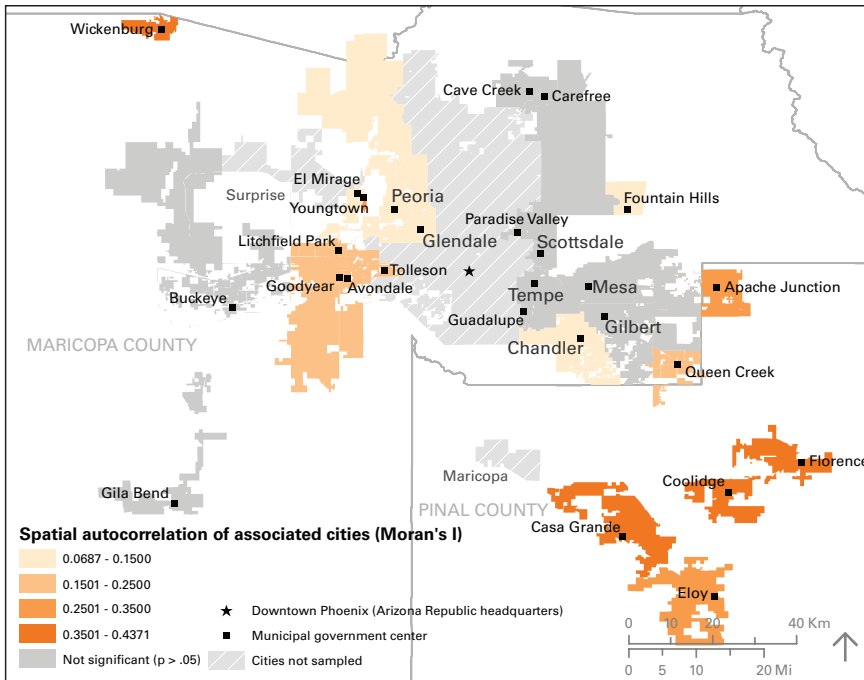
Figure 12 Cities associated with Queen Creek.



The largest core cities—Tempe, Mesa and Scottsdale—were not significantly auto-correlated with citations of other cities. These larger cities were more likely to be cited without co-occurring citations of other nearby cities. These independent news images may be related to the presence of high-profile and newsworthy institutions, such as Arizona State University in Tempe, or wealthy populations with a large corporate presence (Palmer 1998; Avraham 2000). Scottsdale, for example, hosts the headquarters of several major national corporations, is the site of the Mayo Clinic, and is rich in tourist amenities. Greater numbers of newsworthy institutions could lead certain cities to have more news coverage that would increase their attention profile in newspapers independently of neighboring cities.

Different interpretations of spatial relationships within urbanized areas may be another reason for central cities' greater levels of news coverage that is unrelated to their neighbor cities. Spatial relationships within the urban core may be less tied to linear distance and more so to cultural affinities, traffic patterns and travel times. The city is not a "homogenous linguistic and cultural space;" in other words, mental maps of the city are not

Figure 13 Cities showing significant spatial autocorrelation with neighboring cities based on association within newspaper articles. Spatial weights were based on point-to-point distance between municipal government centers.



objective nor representative of actual distances (Gould & White 1986, 152). For example, the presence of large undeveloped American Indian reservations within the Phoenix metropolitan area, which act as boundaries for the growth of some municipalities (Gober 2005, 115), may create barriers in media space, just as would a mountain range or international border (Gould & White 1986). In this case, media associations between the cities of Mesa (Figure 10) and Fountain Hills may be affected by the presence of the Salt River Pima-Maricopa Indian Community between them. In this sense, the semantic geographies constructed within news articles may not reflect a physical map, but rather journalists’ mental maps.

CONCLUSIONS

Places mentioned by newspapers form their own semantic geography with their own spatial relationships. Mapping these characteristics and relationships can elucidate and clarify the implicit geographies that are created by the selection process of the news media. These maps show that the process of news production and distribution is not objective. The journalistic process results in a pattern of news coverage with consistent spatial biases. In this local scenario, these biases favored cities whose residents had higher incomes and were therefore more likely to be consumers of news.

These results also show a predictable pattern of correlation between cities based on spatial relationships. In other words, cities that are closer together in space were significantly more likely to be mentioned in the same article than distant cities. Positive rates of spatial autocorrelation were also detected in small and peripheral cities. Large and central cities were less likely to be covered in the context of other nearby cities. Correlations based on proximity were weaker for larger core cities, such as Scottsdale, Mesa and Tempe, than for smaller peripheral cities, which were more likely to receive coverage with more distant neighbors than were core cities.

Much remains to be explored regarding place representations in the mass media. This research surveyed only officially named and bounded entities that were consistently referred to in the same way by journalists. Places that don't show up on official maps, or even semi-official sub-units of these broad territories, may also show spatial patterns of news coverage bias. Coverage of the many neighborhoods within a city, such as the "urban villages" within the City of Phoenix (Gober 2005, 155), may show similar spatial biases. But place names do not always refer to bounded chorographic entities (Relph 1976); acquiring and mapping the boundaries of unofficial spaces, and obtaining accurate demographic data of these spaces, pose additional challenges. Representations by mainstream media are also not monolithic and can be contested by other forms of local journalism (Martin 2000).

In addition to spatial patterns in the coverage of existing places, further work should examine the messages contained in news coverage, and how these messages vary across places. There are suggestions that places can be typecast and categorized as templates for media themes (Kitzinger 2000). Do these patterns play out systematically based on existing demographic characteristics or spatial relationships? In particular, it may be worthwhile to examine the discourse patterns in the media with cities' relationships with their natural environment (e.g. Adams 1986; Van Belle 2000; Farbotko 2005; Larsen & Brock 2005). The contextual patterns of spatial association that this article demonstrated may also arise when comparing dissimilar entities, such as the association of cities with conservation areas or counties.

The results of this study showed two generalized patterns of metropolitan news coverage. First, city size and socioeconomic status are related to levels of news coverage. Second, journalists use spatial context in their news production decisions. Newspapers cover proximate cities in proximate ways within the semantic geography inscribed by the news media. The information spaces created in the journalistic process are both spatially biased in terms of overall coverage toward more "newsworthy" localities and spatially accurate in their modes of contextualizing and situating places with other places. The spaces and places that are represented in the news media reflect both physical spatial relationships and the cognitive maps of journalists and readers.

ENDNOTES

“[city name]” was used as the search string within headlines, datelines, and lead paragraphs. An additional string of “Front” OR “Local” OR “Valley & State” was used to select only news articles.

² The cities of Surprise, Superior, and Mammoth were excluded on this basis.

³ Maricopa city was excluded because it shares a name with Maricopa County.

⁴ Winkelman, Kearny and Hayden were excluded for small populations (less than 1000).

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