

Commercial and Residential Districts **Motives for Stop Sign Replacement Based on Urban Space Function**

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Abstract: Where are worn or linguistically 'inappropriate' signs more likely to be: in the residential or commercial districts of Montreal? Making the assumption that the act of replacing stop signs has a great deal to do with a decision made by locals to inform the municipality of the need for replacement, this paper attempts to tentatively use the frequency of heavily damaged or English signs in clearly defined commercial and residential zones to infer the ways in which these different urban spaces are used and maintained by their inhabitants.

Introduction

On a small street in Cote St. Luc during my fieldwork for the Stop: Toutes Directions project, a family stopped packing up their car and asked us why we were taking a picture of the stop sign in front of their house. When we explained it was for a McGill University project about language in Montreal, one of them smiled and said, "Well, don't tell anyone they're in English: we'll have visitors!" The residents of this remote residential neighbourhood felt that their stop signs would be changed only if someone informed the authorities that they were ignoring the current language suggestions of the Quebec government, and they clearly did not want this to happen.

This raises some interesting questions about the nature of stop signs in different areas of Montreal. For example, it is unlikely that business owners would express the same sentiments in a more commercial area with heavier human (and vehicle) traffic. This begs the question of what motives we can infer from the replacement – or the preservation – of stop signs in urban spaces with different functions. Would business owners care more about the appearance and language of the signs in front of their stores, eager to please the city and their customers? Or would residents care more, using stop signs an expression of a clean and safe family-oriented community with a clear linguistic identity? In other words, where are worn or linguistically 'inappropriate' signs more likely to be: in the residential or commercial districts of Montreal? Making the assumption that the act of replacing stop signs has a great deal to do with a decision made by locals to inform the municipality of the need for replacement, it is possible to tentatively use the frequency of heavily damaged or English signs in clearly defined commercial and residential districts to infer the ways in which these different urban spaces are used and maintained by their inhabitants.

Defining A Commercial District

The first issue that must be resolved when dealing with questions of urban space and its function is how to define different types of space. In this case, some kind of criteria was needed to define areas as commercial or residential. Based on my own knowledge of the city, I realized that the majority of our area of study was residential, and so I focused on identifying a commercial district. To do this, I reasoned that a commercial district would contain a high concentration of tourist destinations, stores, restaurants, bars, and hotels; all of these can be easily located and identified using the Internet.

Residential neighbourhoods, on the other hand, would have smaller concentrations, either in the form of malls or main streets, with vast tracts of land with houses that would have no commercial listings. Using Google Maps and Google Earth, I searched for general "Places of Interest", as well as key words such as shopping and restaurant, including some major chains, such as McDonald's and Second Cup. There was a clear concentration in the southeast corner of our zones (Fig. 1).

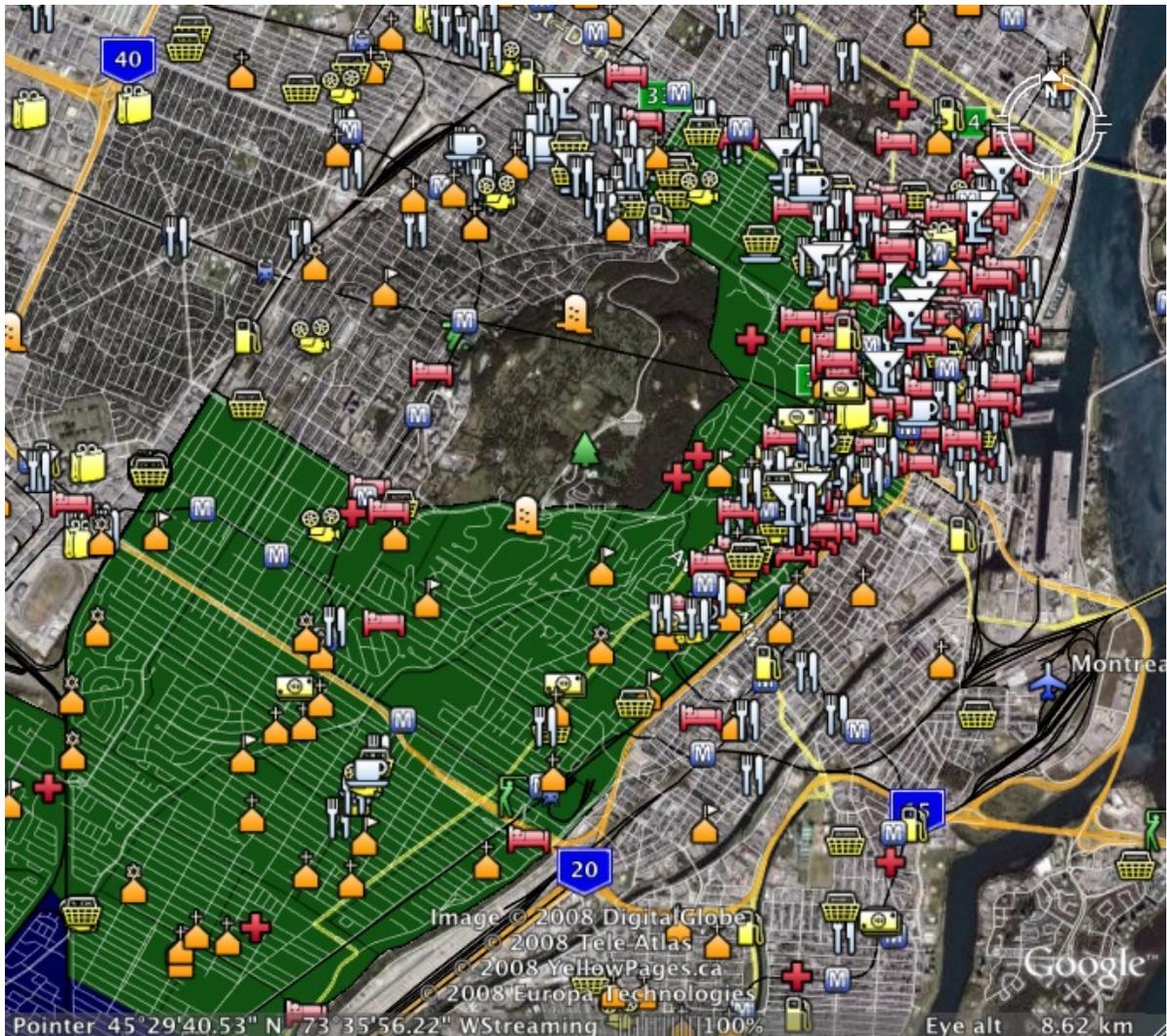


Figure 1: Results of a search of "Places of Interest" in Google Earth. Note the concentration in the SE corner of the green area, our zones of study.

Looking more closely at the concentration of commercial businesses, there were also streets that marked the borders of the district. Sherbrooke St., for example, is quite clearly the northern-most street. Although the concentration of businesses does continue to the southeast and east, we did not collect information on these regions, and thus I could not include them in my commercial district for the purposes of this study. The concentration to the northeast above Sherbrooke was identified as a close cluster of shops along Boul. St. Laurent and St. Denis, surrounded by personal residences, and was therefore also excluded from the commercial region.

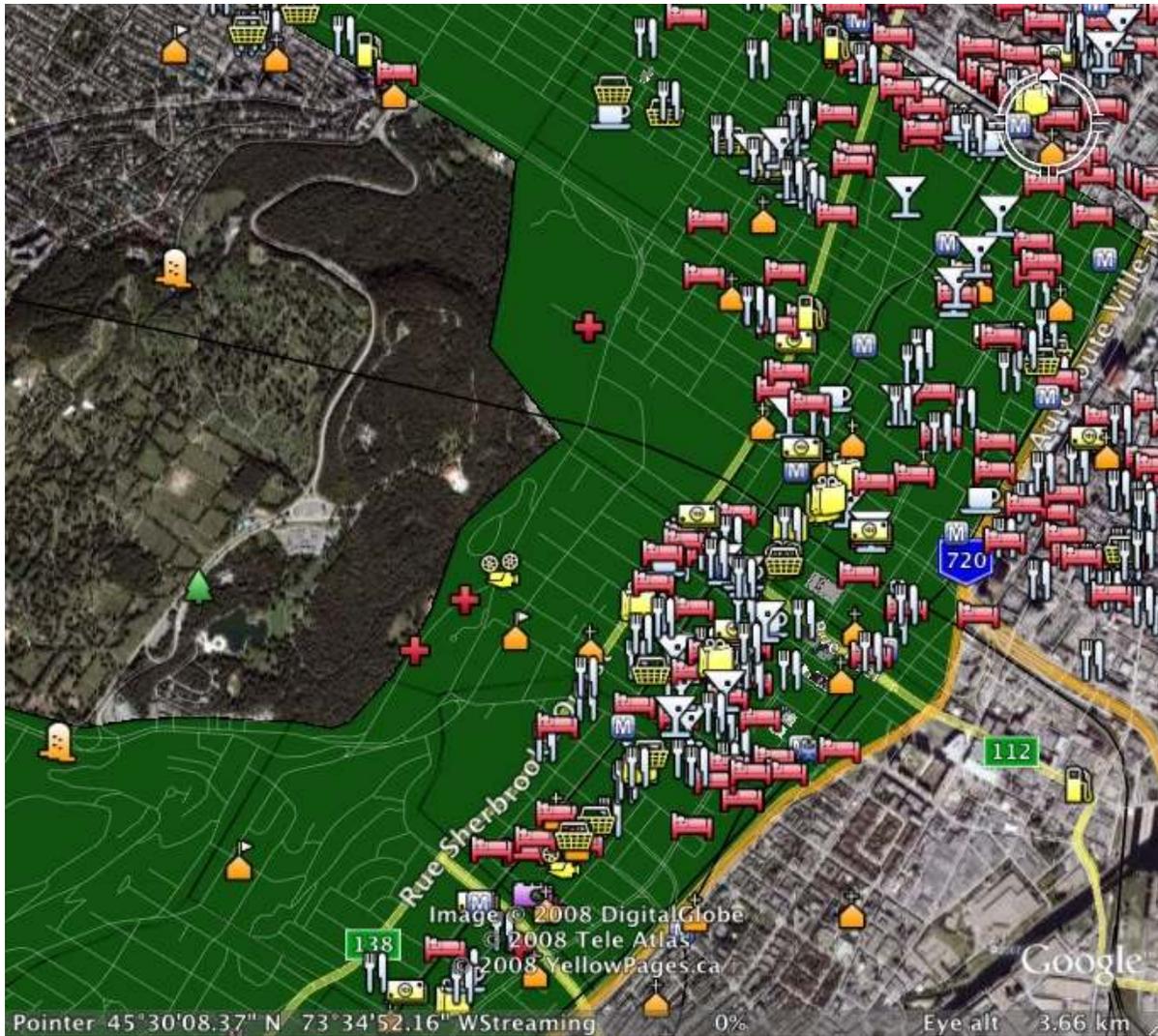


Figure 2: A close-up of the cluster of commercial businesses.

Based on the zones that we established to collect our data, the commercial zone includes zone 3, zone 5, half of zone 6 and most of zone 7 (see Appendix A for a list of specific signs in zones 6 and 7). It does not include anything north of Sherbrooke, east of St. Denis, or west of Atwater (see Figure 3).



Figure 3: The established commercial zone in relation to the zones used for data collection.



Figure 4: The Commercial Zone in its wider Montreal context.

Before moving on to our analysis of these two defined areas of the city, it is important to note that recent scholarship has found several very serious flaws in creating this kind of typology. Gastner et al (2004), for example, argue that when looking at US election data, we should not be looking at Democratic (blue) and Republican (red) states, but rather a spectrum of what are realistically purple districts. Similarly, a better method for this project would have been to create a spectrum of space function, with residential at one end and commercial at another. This would have resulted in a much more detailed, and ultimately, realistic, depiction of how space is used and how this function is distributed in the city of Montreal. This is obviously further work that needs to be undertaken for this project to be taken any further.

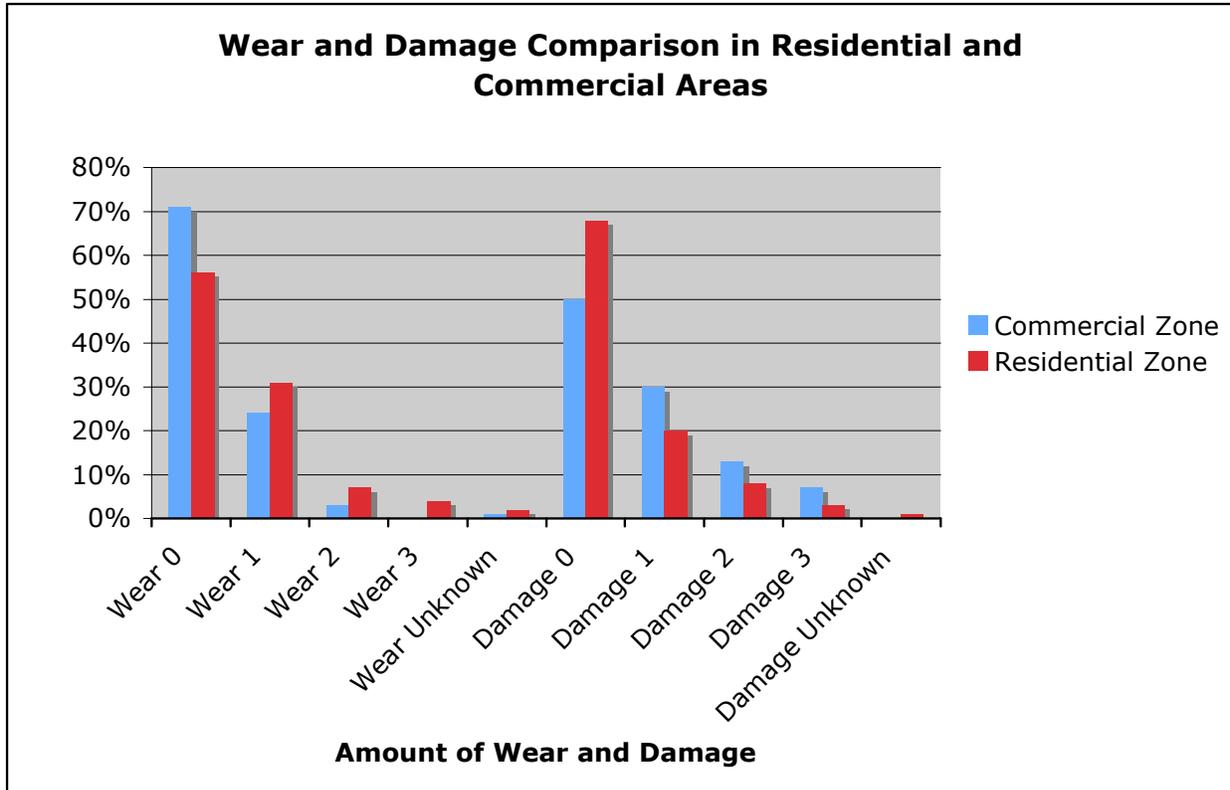
Now that we have established a commercial district, we can begin to compare the two in terms of the quantity, quality, and language of stop signs, using histograms based on frequency and percentage. We can then identify any potential patterns and use chi-square tests, where appropriate, to determine their potential relevance. Finally, we can suggest possible explanations for any differences that might occur between the two types of urban space.

Comparing Commercial and Residential Districts

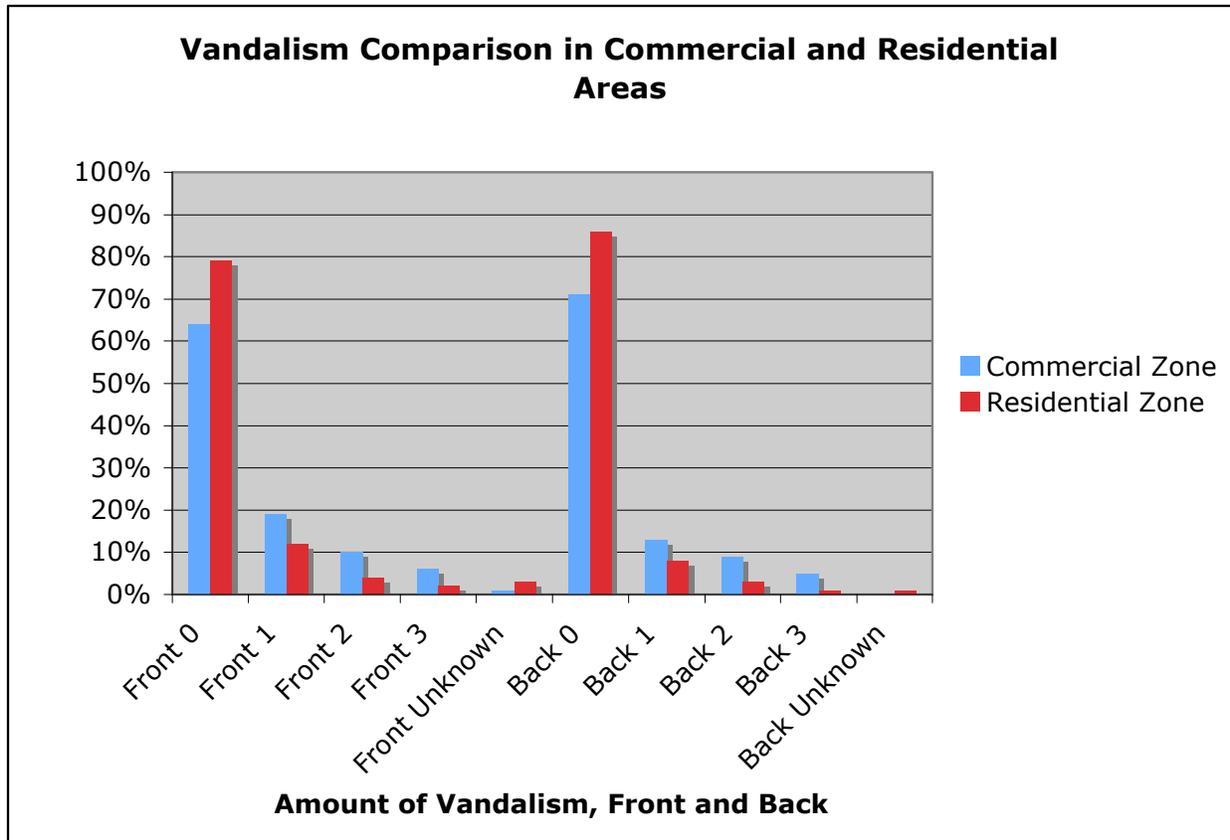
First, we must establish that we cannot use the raw data to compare these two districts, because the quantity of stop signs varies greatly between the two. Of the 2816 stop signs that we studied, only 203 are in the commercial zone I have identified. This means that only 7.2% of the stop signs are in a commercial zone. This is partially due to the fact that the commercial zone is significantly smaller than the residential one, but also because downtown areas are more likely to use street lights than stop signs. This, however, does not render our study irrelevant. Those 203 stop signs exist in a non-residential neighbourhood that is used by different people in a decidedly different way, and thus they might mark an exception to whatever patterns we might identify in the rest of our data set. We must be careful,

however, to not discuss the quality and language of the signs in terms of absence/presence or simple frequency, because such numbers are incomparable; instead, we must base our comparison on percentages of the total number in each category.

Quality

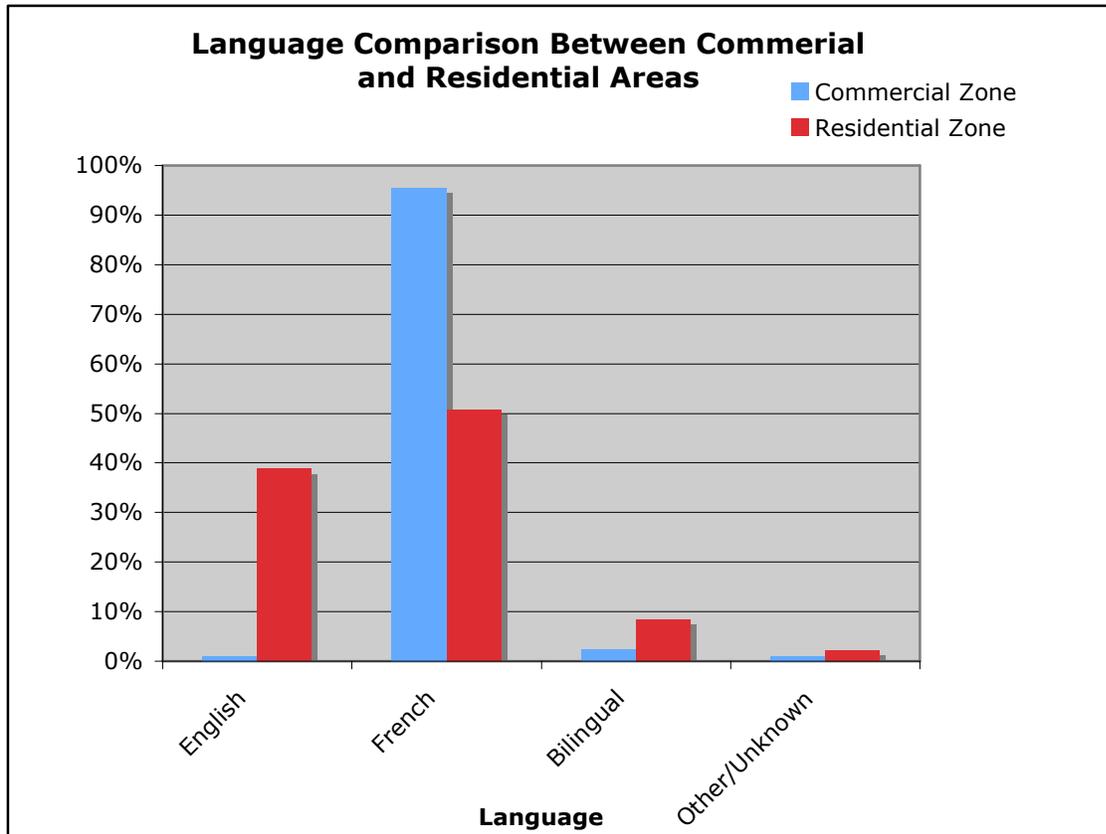


Commercial and residential zones appear to have similar trends when it comes to the wear and damage of their stop signs. Clearly, the majority of their signs have no wear or damage, with the number of signs decreasing as the amount of damage and wear increases. This being said, there are some significant differences between the two. A chi-square test was conducted where there was a contrast between commercial and residential districts greater than 10% for any one level of wear or damage, in order to determine if these visually identified differences were statistically significant in any way. This is only the case in two situations: the commercial zone has 15% more signs with no wear, and the residential zone has 18% more signs with no damage. This reversal is in itself interesting, since common sense would generally argue that wear and damage go hand in hand. Both differences were found to be statistically significant, with the p-value for wear at 0 being 1.85729E-05, and for damage at 0 p = 2.15437E-07.



The frequency of vandalism appears to follow a very similar trend to wear and damage, hardly surprising considering the relationship between all three: newer stop signs will tend to have less wear, damage, and vandalism simultaneously. Once again, the complete lack of vandalism on both the front and back of the signs were the only situations in which there was a difference greater than 10% between commercial and residential districts. In both cases, residential neighbourhoods had less vandalism (15% on both the front and back), and these were both found to be statistically significant differences using a chi-square test: $p = 4.94177E-07$ for the front, and $p = 2.2782E-08$ for the back.

Language



This comparison makes it quite clear that language contains the most significant difference between stop signs in residential and commercial areas. 96% of the stop signs in the commercial zone are French, where 39% are French in residential neighbourhoods. The frequency of English and French in residential neighbourhoods appears to be much more even than in commercial districts, where there is a clear preference for French signs. For English signs, the chi-square test revealed a surprising $p = 4.13975E-27$, and for French signs, $p = 6.87151E-35$, both indicating unusually high levels of significance. While this might appear to be solid proof that business owners care more about their signs being in French, we cannot jump to this conclusion: it is important to remember that the commercial zone is largely located in one municipality, and it is possible that the municipality chose the language without the input of those who spend the most time in this district. The fact that English and French appear to be competing for the majority in residential districts might indicate a greater interest in the language of stop signs in those neighbourhoods. Regardless of the motives (see Discussion below), however, we can safely conclude that the commercial centre of Montreal has an overwhelmingly significant majority of French stop signs.

Discussion: Urban Space and Stop Signs

There are clearly some interesting differences between commercial and residential districts and their stop sign preferences. But before any conclusions can actually be made from such a study, we must first consider who is actually replacing these stop signs, as this will significantly change the way we interpret their decisions. It appears that stop signs are replaced by individual municipalities (see article 'Controversy Grows', 2008), but the level of input from the local residents or business owners is particularly difficult to evaluate. I would tentatively argue that residential neighbourhoods allow for greater input, simply because when I looked at the official websites for each municipality, only Cote St. Luc, one of the most residential neighbourhoods we studied, had an online form for requesting the replacement of a damaged street sign (request form, 2008). However, it is possible that they are simply

the only municipality to have moved their maintenance request forms online. More research would have to be done to resolve this issue.

Despite these doubts, however, it is fair to argue that personal choice has a great deal to do with the replacement of stop signs. Areas of the city, particularly remote ones but also central locations, are not going to be visited by city workers often, so it takes the initiative of individuals to replace signs. This raises interesting questions about the motives for replacement. Clearly, both residents and business owners want clean, undamaged signs without vandalism, and are willing to work hard to replace them – this is proven in the above charts. For residents, this may part of a desire to create a clean and family-friendly suburban image, and for business owners, this may derive from the need for a strategically welcoming storefront. However, it is with language that we encounter more complex motives for stop sign replacement. There is a significant difference between the distribution of languages when we compare commercial and residential districts. This is partly, as previously discussed, due to the fact that the commercial district lies for the most part in one municipality, whereas the residential neighbourhoods cover more municipal jurisdictions. However, we may also argue that this is because residents care more about the language of their stop signs, willing to fight for what they perceive as an expression of their linguistic identity. Business owners, on the other hand, might prefer to have greater uniformity to express a city-wide identity to tourists and customers. Perhaps they also wish to use French because of their greater visibility to Quebec or Montreal authorities who might look down on the use of English in a Quebecois urban centre.

These different motives expose the influence individuals and local communities might have on their own landscape, forming the space around them as an expression of their identity, or at the very least the identity they wish to advertise to the outside world. To study further the impact of different uses of urban space on stop sign language, I would suggest that some ethnographic fieldwork would be a useful research method in this situation. Determining the function and use of urban space using material culture is certainly feasible, as archaeologists continually prove, but when living populations are at our disposal, it would be irresponsible to ignore them. Without the help of ethnographic data, however, my study unfortunately falls short of any real conclusion. There are clear, statistically significant differences between the commercial and residential stop signs of Montreal; their meaning remains beyond the scope of our project's data, but I hope this study reveals the need for further research in this area.

References

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Appendix A: Stop Signs in the Commercial Zone

Zone	Int #	Sign #	Zone	Int #	Sign #
3	All	All	7	18	2
5	All	All	7	19	2
6	2	7	7	19	8
6	3	7	7	20	7
6	4	6	7	20	8
6	5	7	7	21	1
6	5	8	7	21	2
6	7	7.5	7	22	1
7	9	5	7	22	2
7	9	6	7	23	1
7	11	3	7	23	2
7	11	4	7	23	5
7	11	7	7	23	6
7	11	8	7	24	6
7	12	A	7	25	7
7	13	A	7	26	7
7	14	5	7	27	1
7	14	6	7	27	2
7	15	3	7	28	1
7	16	1	7	28	2
7	16	3	7	29	1
7	16	4	7	29	2
7	16	5	7	30	5
7	17	a	7	30	6
7	17	b	7	31	7
7	18	1	7	31	8

Appendix B: Histogram Data

WEAR

<i>Commercial</i>			<i>Residential</i>		
<i>Bin</i>	<i>Frequency</i>	<i>Percentage</i>	<i>Bin</i>	<i>Frequency</i>	<i>Percentage</i>
0	145	71%	0	1463	56%
1	48	24%	1	822	31%
2	7	3%	2	179	7%
3	1	0%	3	94	4%
Other/Unknown	2	1%	Other/Unknown	55	2%
TOTAL COM	0	203	TOTAL RES	0	2613

DAMAGE

<i>Commercial</i>			<i>Residential</i>		
<i>Bin</i>	<i>Frequency</i>	<i>Percentage</i>	<i>Bin</i>	<i>Frequency</i>	<i>Percentage</i>
0	102	50%	0	1778	68%
1	60	30%	1	533	20%
2	26	13%	2	211	8%
3	14	7%	3	71	3%
Other/Unknown	1	0%	Other/Unknown	20	1%
TOTAL COM	0	203	TOTAL RES	0	2613

VANDALISM (FRONT)

<i>Commercial</i>			<i>Residential</i>		
<i>Bin</i>	<i>Frequency</i>	<i>Percentage</i>	<i>Bin</i>	<i>Frequency</i>	<i>Percentage</i>
0	129	64%	0	2059	79%
1	39	19%	1	312	12%
2	20	10%	2	111	4%
3	13	6%	3	57	2%
Other/Unknown	2	1%	Other/Unknown	74	3%
TOTAL COM	0	203	TOTAL RES	0	2613

VANDALISM (BACK)

<i>Commercial</i>			<i>Residential</i>		
<i>Bin</i>	<i>Frequency</i>	<i>Percentage</i>	<i>Bin</i>	<i>Frequency</i>	<i>Percentage</i>
0	145	71%	0	2247	86%
1	27	13%	1	222	8%
2	19	9%	2	79	3%
3	11	5%	3	33	1%
Other/Unknown	1	0%	Other/Unknown	32	1%
TOTAL COM	0	203	TOTAL RES	0	2613

LANGUAGE

<i>Commercial</i>			<i>Residential</i>		
<i>Bin</i>	<i>Frequency</i>	<i>Percentage</i>	<i>Bin</i>	<i>Frequency</i>	<i>Percentage</i>
English	2	1%	English	1011	39%
French	194	96%	French	1328	51%
Bilingual	5	2%	Bilingual	218	8%
Other/Unknown	2	1%	Other/Unknown	56	2%
TOTAL COM	0	203	TOTAL RES	0	2613