

# **STOP, ARRÊT or ARRÊT/STOP?: A nuanced approach (using agent-based data collection) to examining the language politics behind material culture in Montreal**

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**Cite as:** Beck, Jess. 2008. Stop, Arrêt or Arrêt/Stop: A nuanced approach (using agent-based data collection) to examining the language politics behind material culture in Montreal. *Stop: Toutes Directions*, report 01. <http://stoptoutesdirections.org/report01.pdf>.

*Abstract: This paper examines the frequency of damage, wear and frontal vandalism in seven municipalities or borough in Montreal in order to document any interregional differences or similarities in regards to general stop sign abuse. Each area surveyed appears to follow specific patterns of stop sign replacement, with Cote Saint-Luc, Hampstead and Westmount intentionally installing new "STOP" signs. Additionally this project takes into account the language of the stop signs displaying indicators of abuse in each region, finding that "ARRÊT/STOP" signs display higher and more varied amounts of wear in all relevant regions.*

## **Introduction**

In the late 1980s a language regulation was passed in Montreal prohibiting the installation of any more stop signs reading "STOP" in English, indicating that all replacement stop signs from that point forward must read either "ARRÊT" or "ARRÊT/STOP" ("Montreal 'Stop' Signs"). This official restriction was enacted in order to further the francophone leanings of the Quebec government, but in addition to underscoring the perceived primacy of French language this decision caused a perceptible change in contemporary material culture. What is particularly noteworthy about this shift from "STOP" to "ARRÊT/STOP" and "ARRÊT" is that it is not always apparent or demonstrable when examining the existing record of material culture.

Due to the predominantly Anglophone nature of certain Montreal neighborhoods, "STOP" signs have not always been replaced by "ARRÊT" signs, and indeed, the minimal levels of wear and damage on English language stop signs in certain regions are indicative of post-1980's "STOP" sign installation, in clear violation of the aforementioned language precept. By investigating the amounts of damage, wear and frontal vandalism to stop signs in individual municipalities, one can demonstrate which municipalities or boroughs are complying with the linguistic regulation, which have simply chosen to follow it half-heartedly, and which are deliberately flouting it. Accordingly, this examination of language politics in Montreal will begin by documenting the number of stop signs in each language class per municipality, before moving on to a more nuanced analysis of the differing levels of damage, wear and frontal vandalism among different language classes given a municipality.

## **Methods**

In order to examine the relationship between language and indicators of abuse (i.e. wear, damage and vandalism) among stop signs in Montreal the data were first organized by municipality or borough and the number of stop signs in each language class were tallied. After this basic step the amounts of abuse common to each region were compared, before the compilation of a language-based examination of abuse. Such a strategy allowed any trends that were a result of municipality sign replacement policies to be revealed while also allowing for a brief examination of inter-municipality differences between more general patterns in indicators of abuse for each neighbourhood.

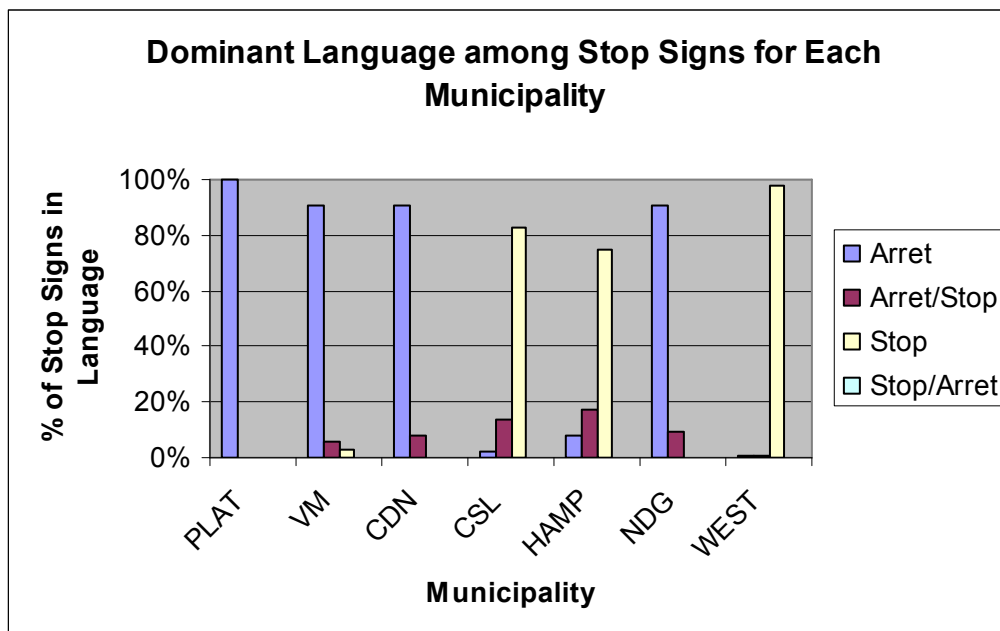
These particular indicators of abuse were chosen due to their ability to reveal significant information about stop sign replacement. Wear is strongly correlated with age due to the erosive processes that must take place for it to occur, while damage and vandalism can indicate both regional dissatisfaction with stop sign language and indicate the level of abuse a municipality will tolerate prior to replacing a sign.

To examine the amounts of damage, wear and vandalism per abuse category in each municipality, the number of stop signs within an abuse class were compared to one another as a percentage of the total number of stop signs in the abuse class within that municipality. For example, the statistic of 55% for Ville-Marie at a Damage Level of 0 indicates that 55% (167/302) of the signs in Ville-Marie were not damaged. However, during the second section of the paper in which abuse indicators are examined in relation to language, the percentages that appear are taken from the number of signs at the particular level of abuse. In this case, the statistic of 88% of "ARRÊT" signs at Damage Level 0 indicates that of all of the 167 signs at Damage level zero, 147 of those read "ARRÊT". The more general approach in the first section of the paper and the more specific language-centric approach in the second section of the paper are consistently followed for all three categories of abuse indicators. It should be noted, however, that the Plateau does not appear in the second section of the paper as all of its signs are "ARRÊT", and the lack of both "ARRÊT/STOP" and "STOP" signs in the region makes linguistic evaluation following the framework used for the other six regions unfeasible.

**Results**

*The Language of Stop Signs in Each Municipality.*

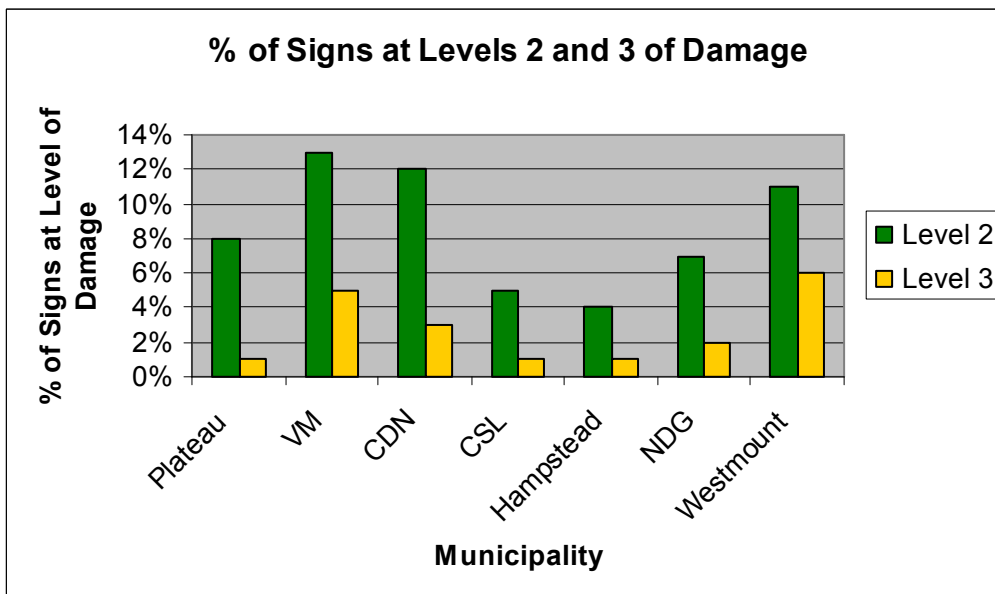
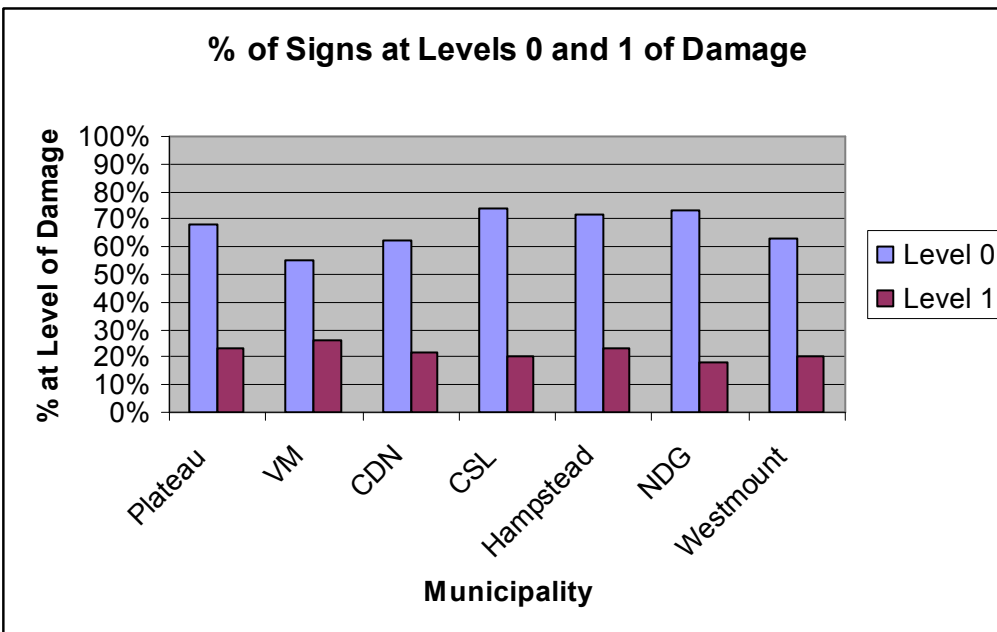
In order to fully appreciate the relationship between language and indicators of stop sign abuse in each municipality, it is necessary to be aware of the language which is predominate among the stop signs in a given region. The municipality abbreviations are as follows: Ville Marie (VM), Cotes-Des-Neiges(CDN), Cote Saint-Luc (CSL), Hampstead (HAMP), Notre-Dame-de-Grace (NDG) and Westmount (WEST). It should be noted that VM, CDN, NDG and the Plateau are all in fact boroughs of the city of Montreal, but on graph legends are referred to as municipalities in order to limit excessive amounts of text in the legend. The following graph provides a basic depiction of the language composition of the stop signs in each municipality (see Appendix A for details):



This graph clearly demonstrates the basic language map of the city possessed by most Montrealers. Cotes-St-Luc, Hampstead and Westmount are all well-established Anglophone strongholds, while French predominates in Ville-Marie, Cotes-des-Neiges and NDG.

*General Damage*

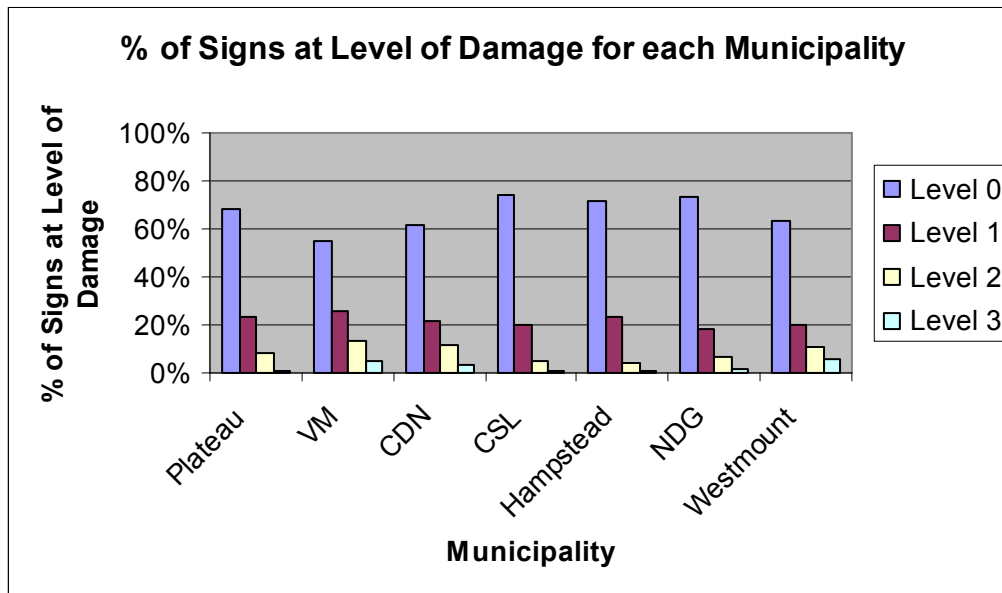
The trends in regards to general damage are fairly unsurprising. On the whole, Level 0 damage predominates each municipality, and is followed sequentially by all of the other levels of damage (See Appendix B for details of the graphs below). Though when comparing the graphs it may appear that Level 2 damage is more common than Level 1 damage, this is as result of the differing scales of the axes due to Level 2 and 3 damage constituting a far smaller percentage of the Municipal assemblages– a phenomenon which will appear in the evaluations of general wear and general vandalism as well.



The table below indicates the mean and median percentage of stop signs at each level of wear, as well as their ranges. It showcases the general decreasing trend in percentage of damage based on increasing intensity thereof.

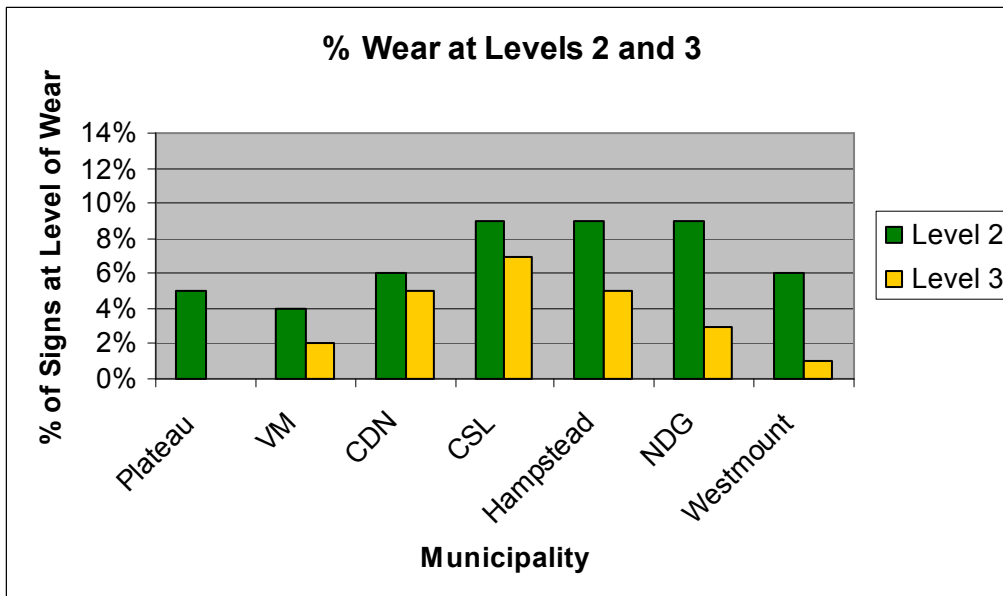
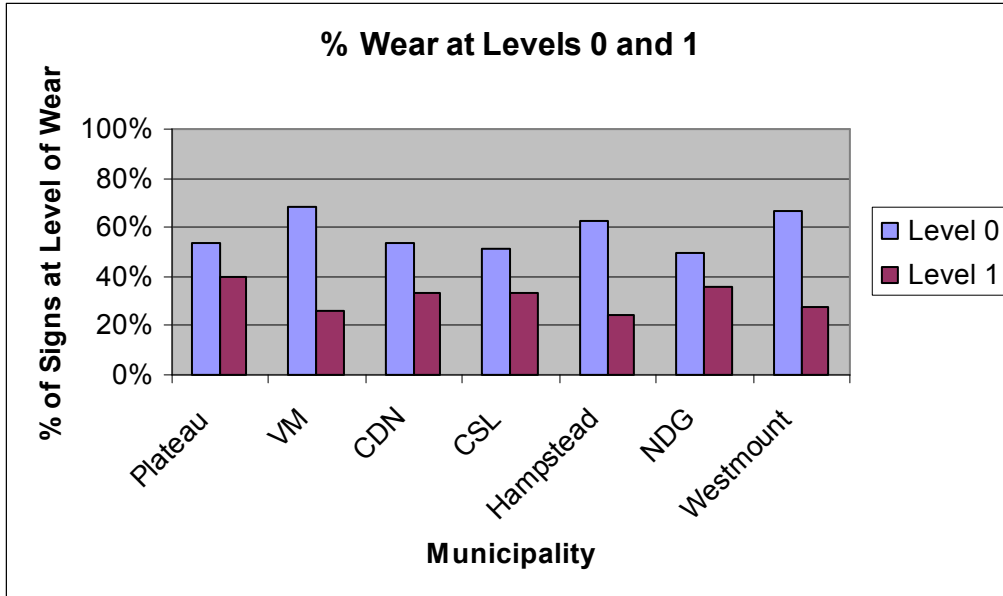
Damage Level	Level 0	Level 1	Level 2	Level 3
Mean	68%	22%	9%	2%
Range	[55%, 74%]	[18%, 26%]	[4%, 15%]	[1%, 6%]
Median	68%	22%	8%	2%

The graph below displays the overarching inter-municipality trend in regards to stop signs and damage. While surprisingly Westmount contains the most stop signs with a Damage Level of 3, it should be noted that these signs constitute only 6% of the assemblage itself (and in fact consists of only one sign).



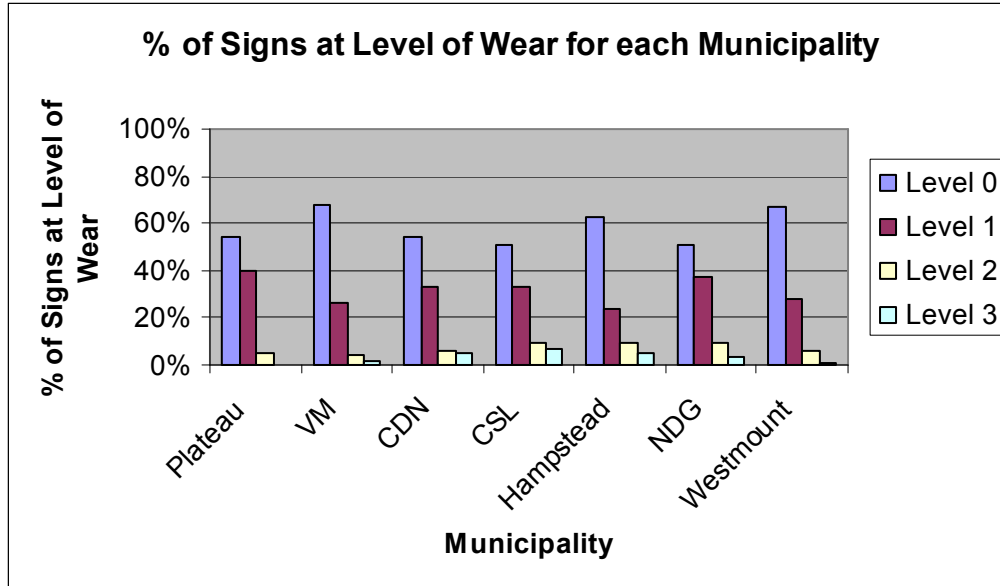
### *General Wear*

As the graphs below demonstrate, the pattern for a decreasing amount of abuse as the intensity of the abuse category increases is repeated in the general wear data, with Wear 0 (or little to no wear) being the most frequent measurement for stop signs in all municipalities (see Appendix C for details). Once again, no municipalities radically differ from their counterparts, with the possible exception of the Plateau, a region with no stop signs expressing Level 3 damage – perhaps simply a suggestion of good stop sign upkeep in that region.



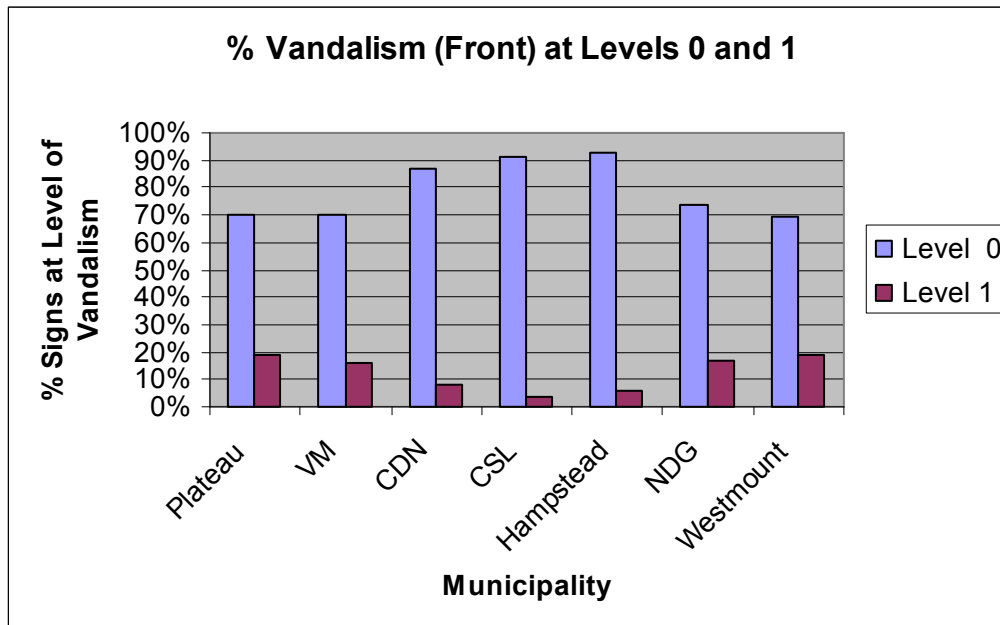
Wear Level	Level 0	Level 1	Level 2	Level 3
Mean	58%	32%	7%	3%
Range	[51%, 68%]	[24%, 40%]	[4%, 9%]	[1%, 7%]
Median	54%	33%	6%	3%

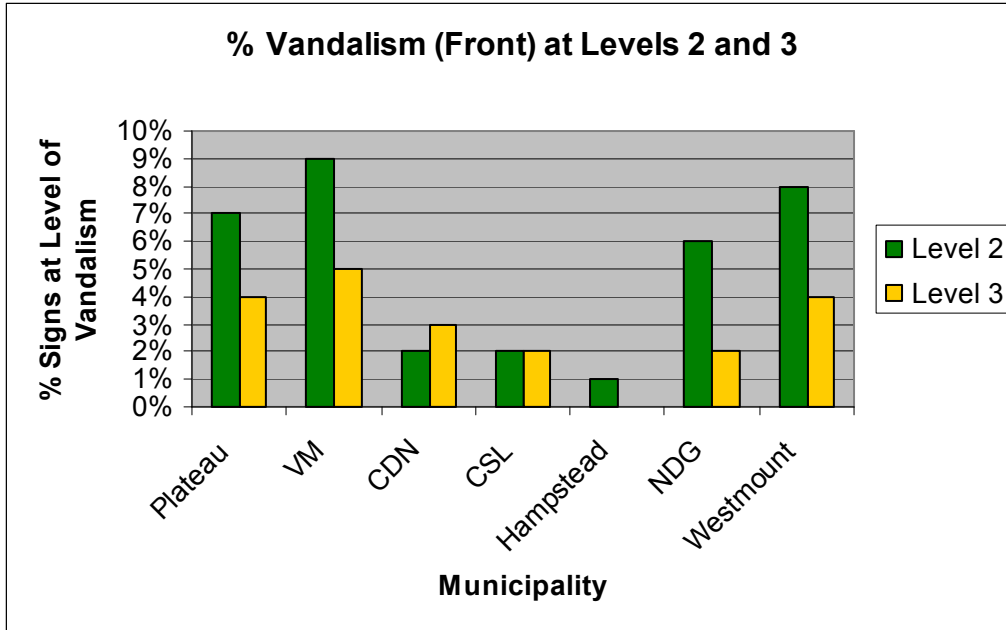
The graph below demonstrates that though there are inter-municipality differences between the percentage of various levels of wear (i.e. the fluctuation between lower and higher percentages of Level 0 Wear), no municipality bucks the trend of wear decreasing with intensity. In some cases, namely that of CDN, CSL and NDG, the percentage of stop signs at Level 1 of wear is closer to the percentage of stop signs at Level 0 of wear, perhaps indicating a less rigorous atmosphere of municipal upkeep.



*General Vandalism*

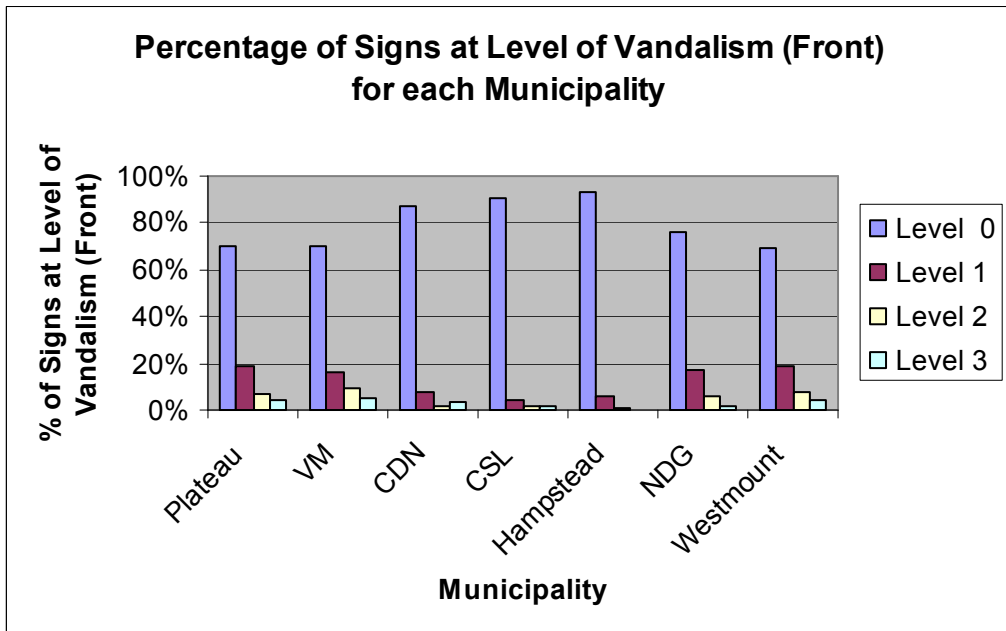
Like wear and damage, vandalism is characterized by the same trend of decreasing prevalence as the intensity of the vandalism increases. (See Appendix D for details). The two outliers in this case are CSL, wherein Level 2 vandalism and Level 3 vandalism are about equal, and CDN, where Level 3 vandalism exceeds Level 2 Vandalism by 1%. Additionally, Hampstead appears to be a region entirely lacking Level 3 frontal Vandalism on signs, though this dearth is unsurprising given the economic situation of Hampstead as one of Montreal’s wealthier municipalities.





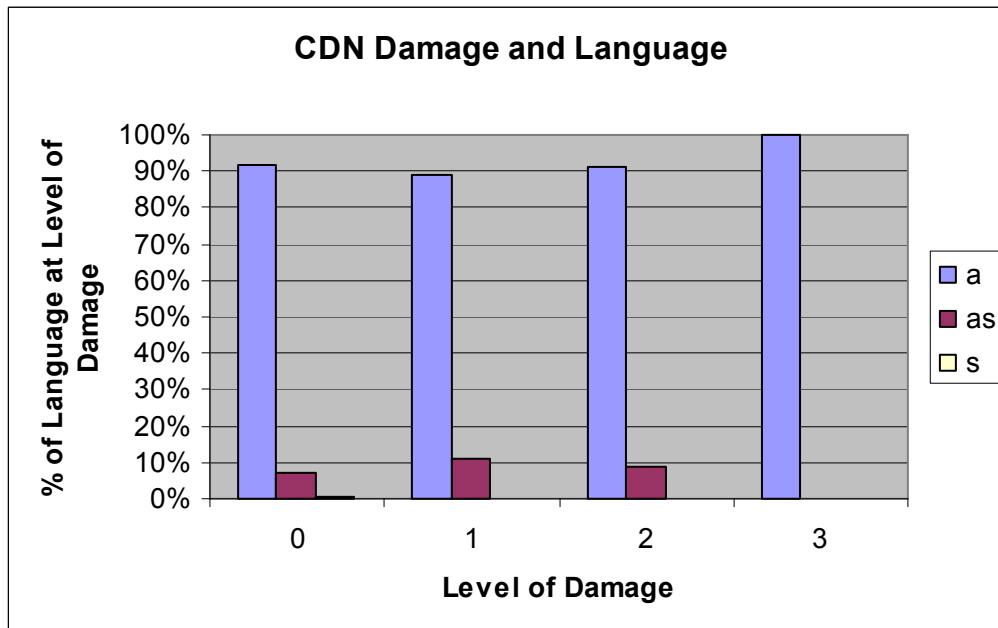
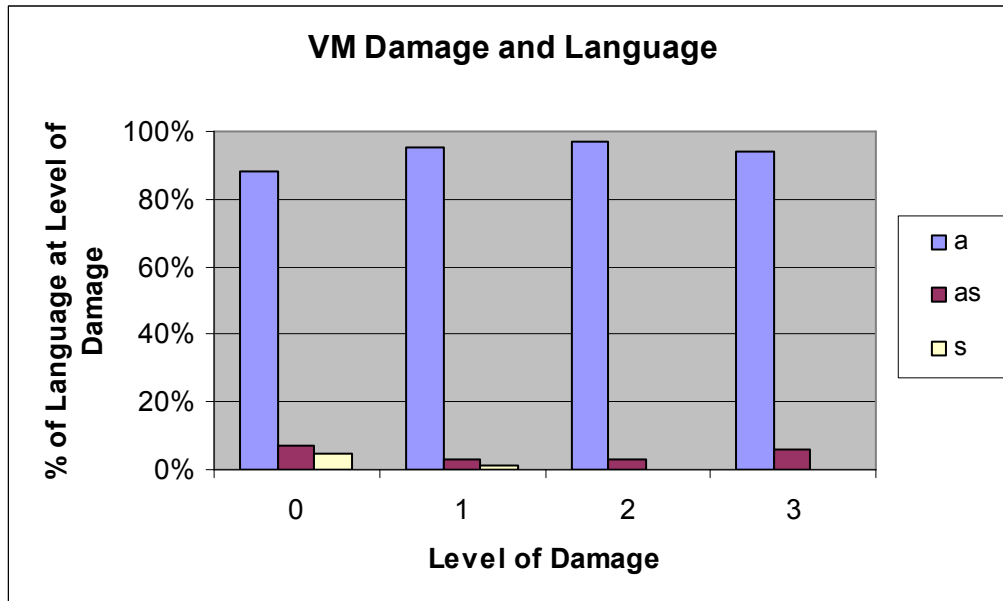
**Vandalism(F)**

Level	Level 0	Level 1	Level 2	Level 3
Mean	79%	13%	5%	3%
Range	[69%, 93%]	[4%, 19%]	[1%, 9%]	[0%, 5%]
Median	76%	16%	6%	3%



Language Specific Damage

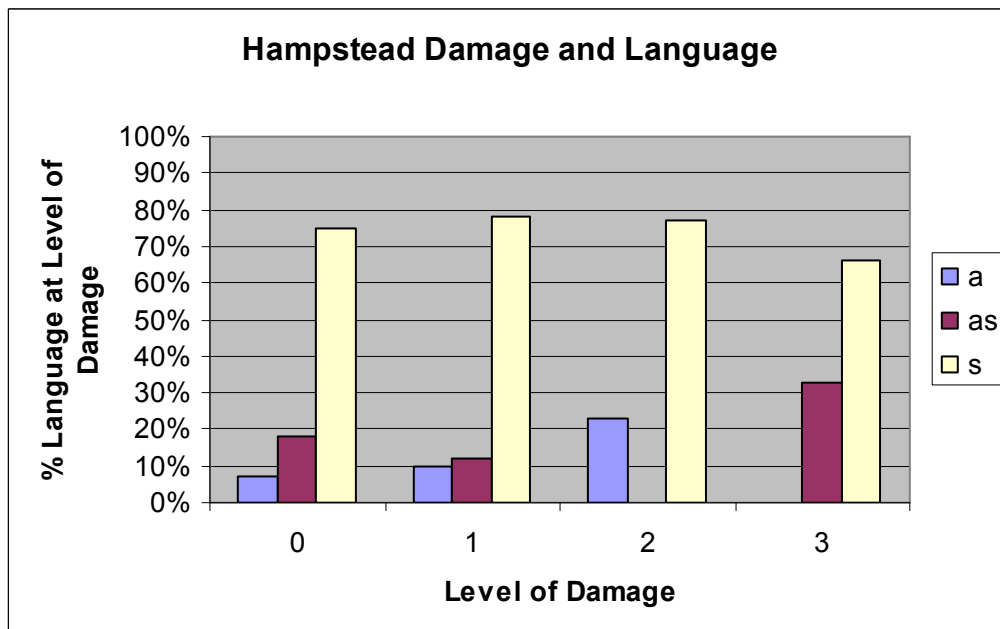
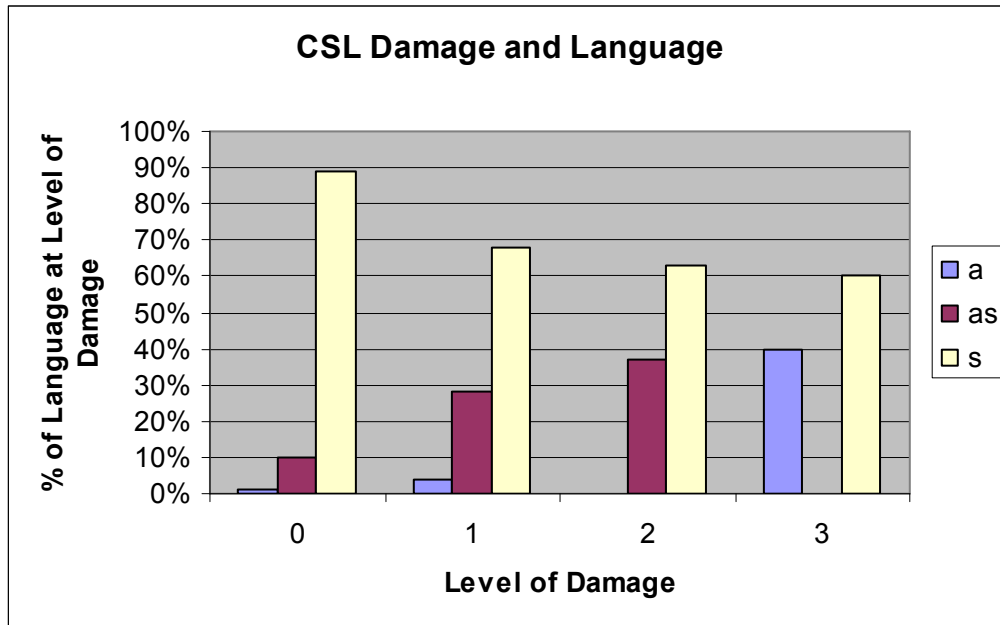
This portion of the paper will examine the percent of signs in specific languages that make up each abuse category. In order to simplify the investigation this examination will occur on a municipality by municipality basis, beginning with VM.

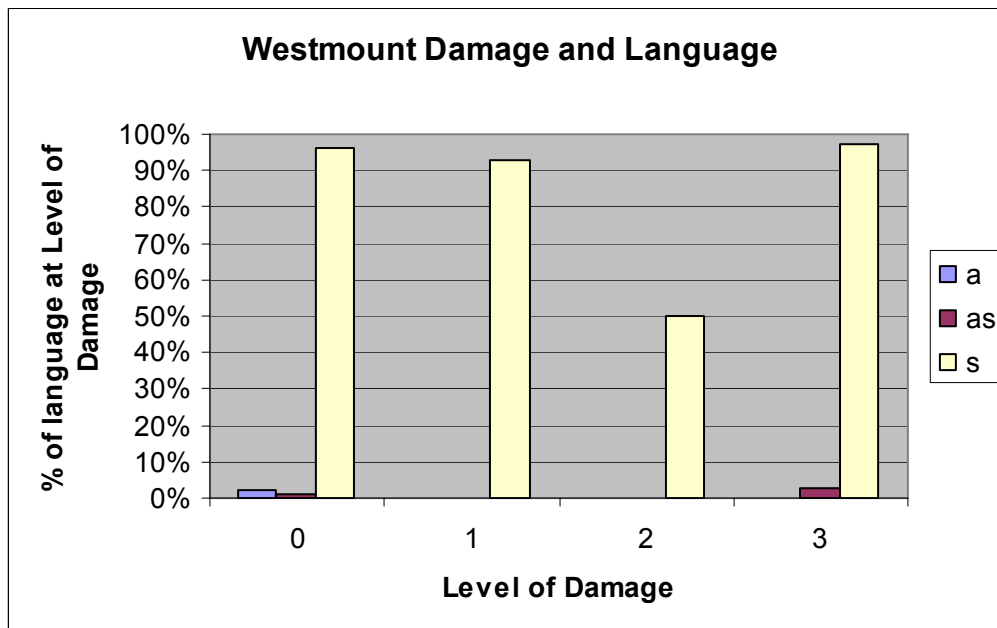
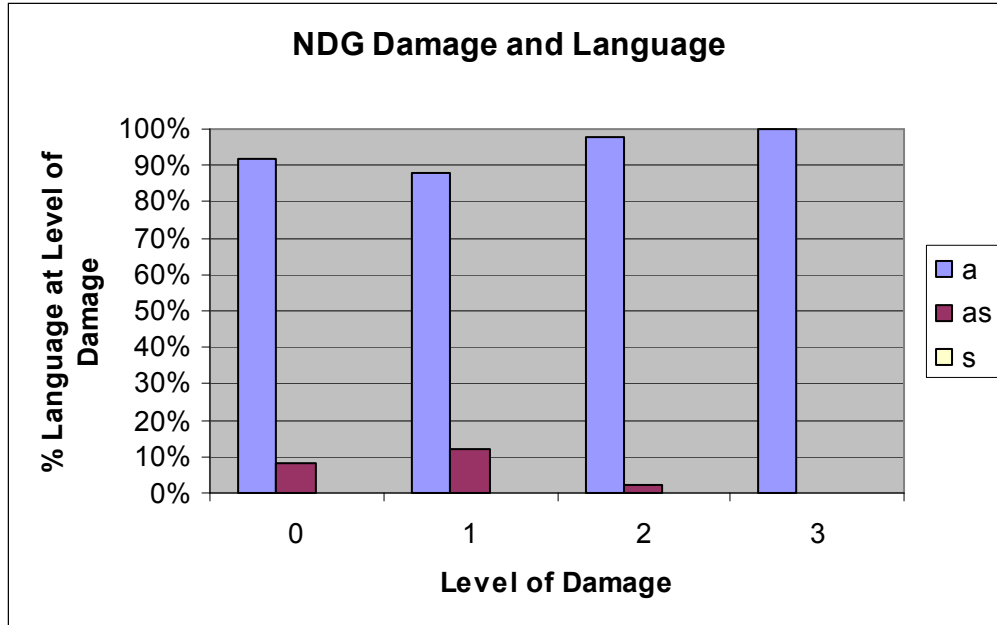


In both of the above graphs, the components of each damage category are predominantly composed of "ARRÊT" signs, followed by a minority of "ARRÊT/STOP" signs, which is in keeping with the languages that dominate each zone (see the first graph in the section for confirmation. In the same vein, the language proportions of CSL, Hampstead and Westmount fall in with their dominant language. Damage in Westmount appears to be largely restricted to "STOP" and "ARRÊT/STOP" signs, with the few "ARRÊT" signs in the municipality suffering no damage whatsoever. Likewise, in NDG, only a miniscule percentage (14%) of "ARRÊT/STOP" signs suffer over Level 1 of damage. In Hampstead, where the dominant language is English, the same high percentage (52%) of Level 2 Wear can be seen on



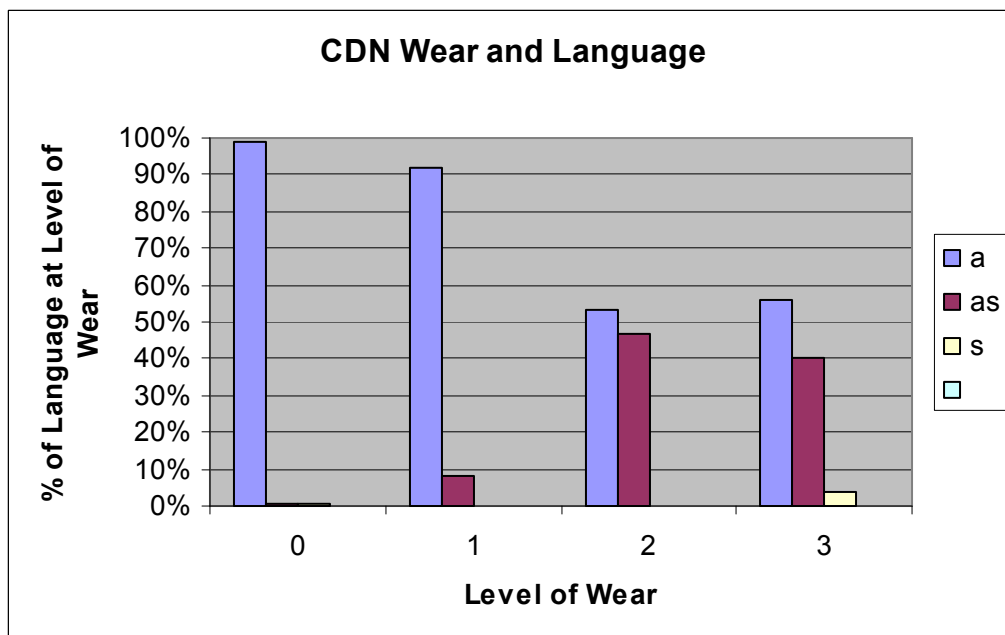
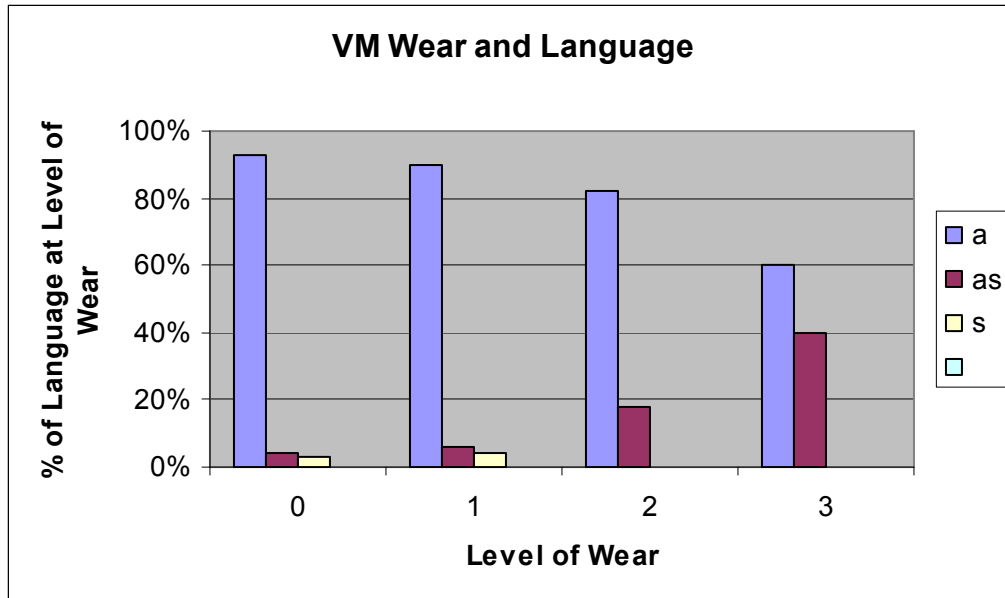
"ARRÊT/STOP" signs, to the point that it exceeds even the majority of "STOP" signs found in every other level of wear.

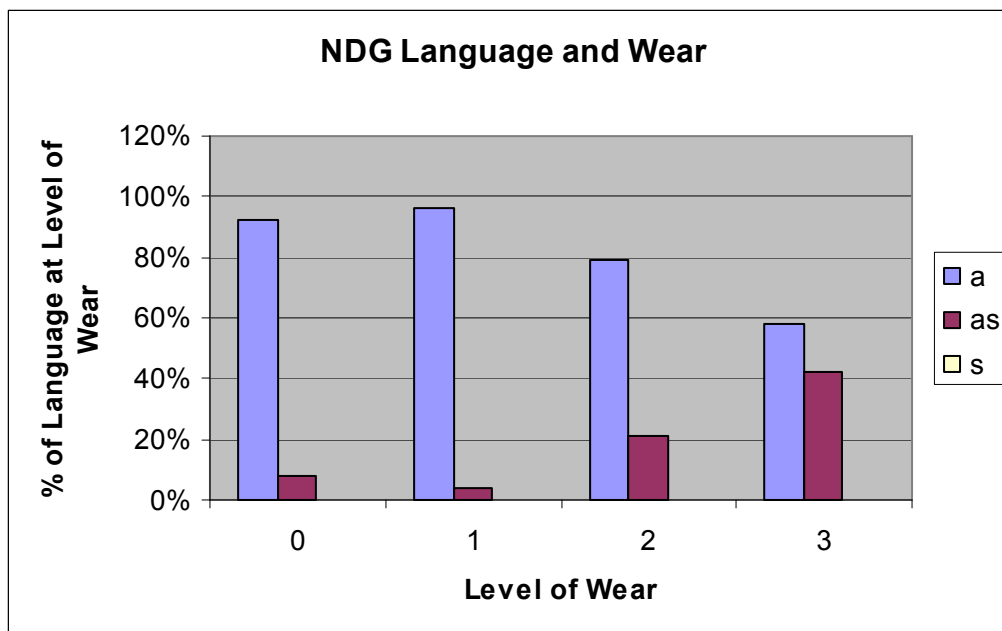
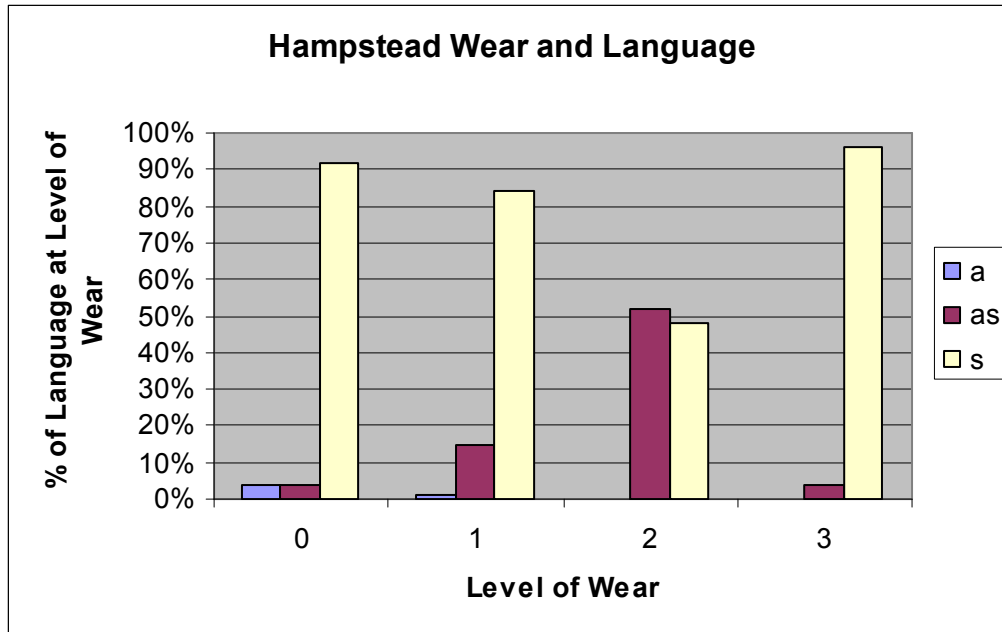


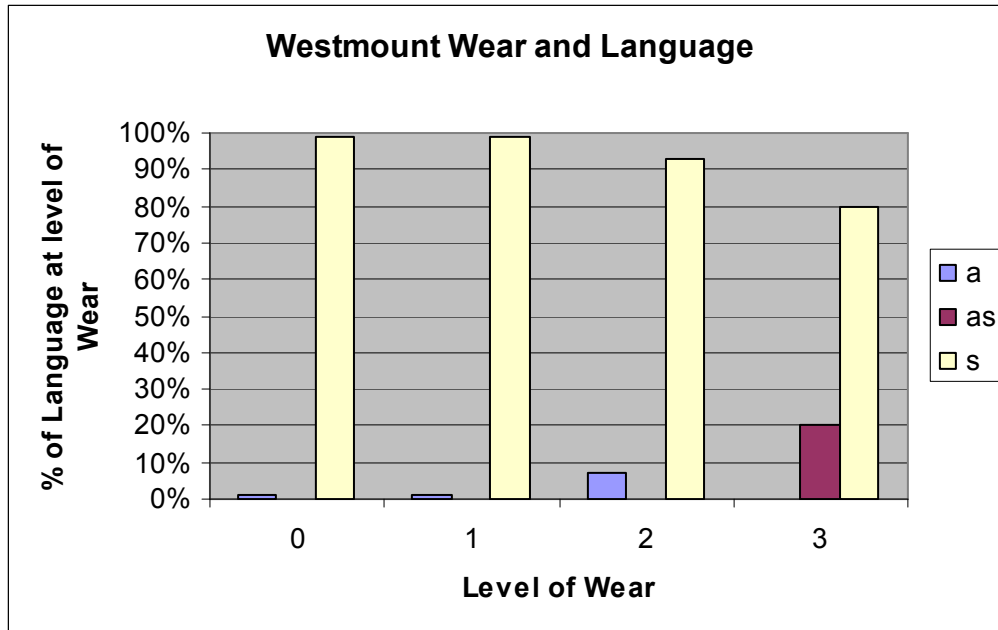


*Language Specific Wear*

Wear is a particularly telling category, as it can indicate whether any municipalities have replaced abused signs with English language "STOP" signs, in direct violation of the 1987 regulation. In VM and CDN, French "ARRÊT" signs are once again dominant at every level of wear, though "ARRÊT/STOP" signs appear to suffer a particularly high degree of Level 3 wear (40%) in VM and Level 2 (47%) and Level 3 (40%) wear in CDN. In NDG (where French is the norm), "ARRÊT/STOP" signs provide 42% of the Level 3 wear. Westmount is the one municipality to buck the trend, with "ARRÊT/STOP" signs comprising only 20% of the Level 3 damage.

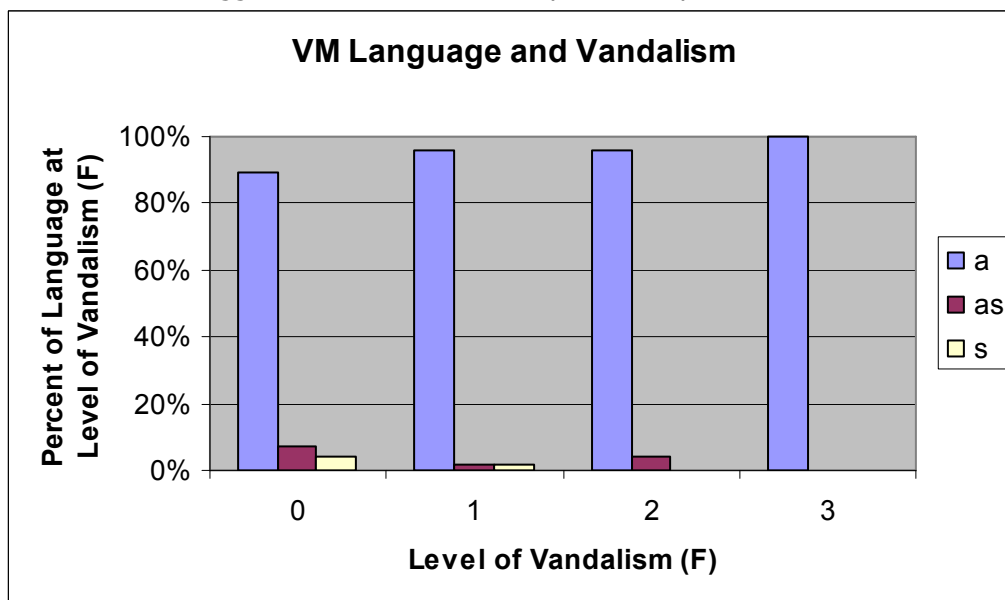


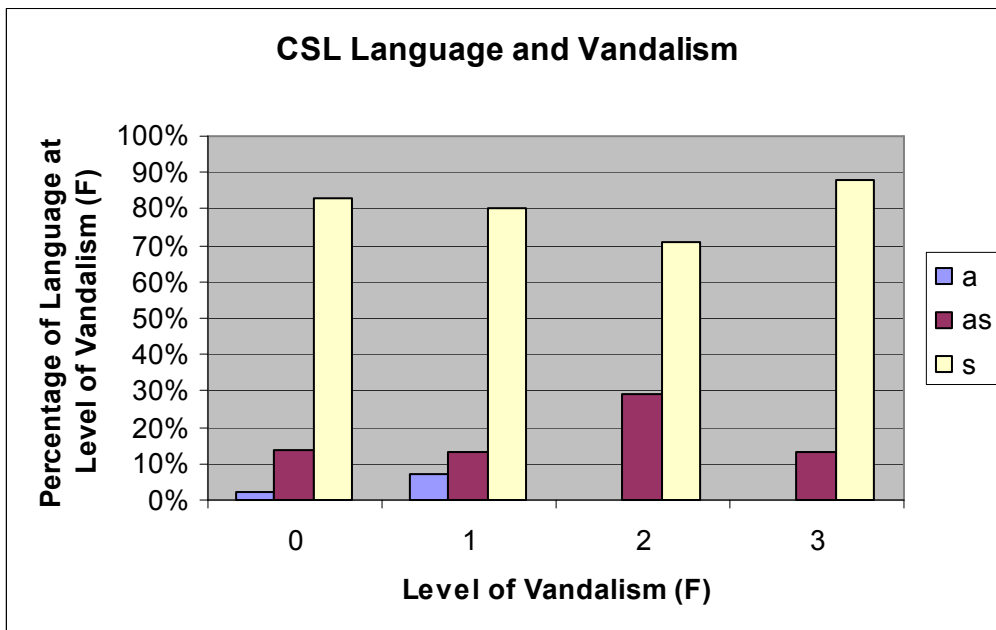
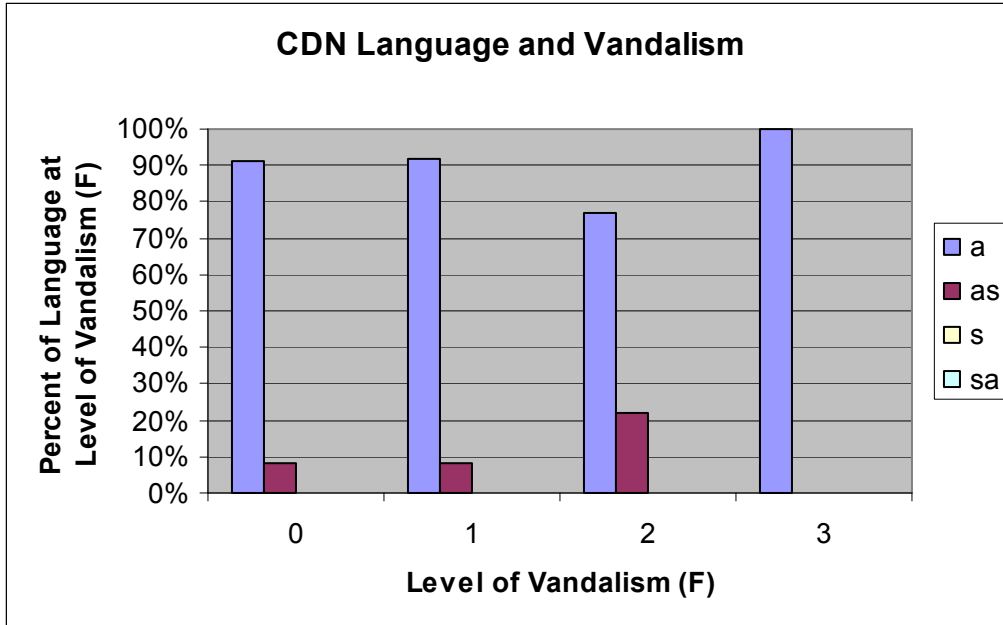


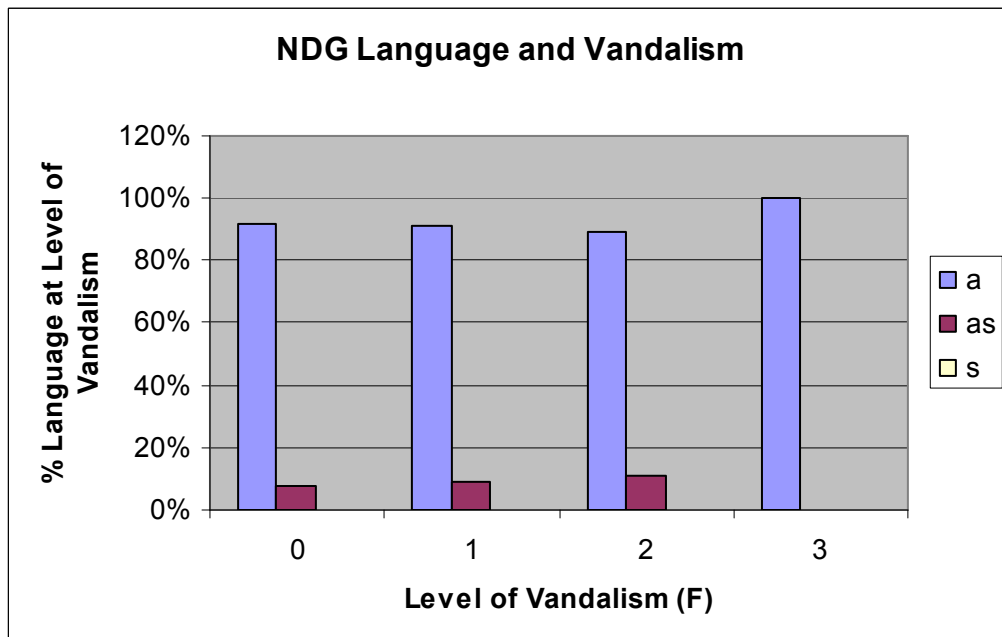
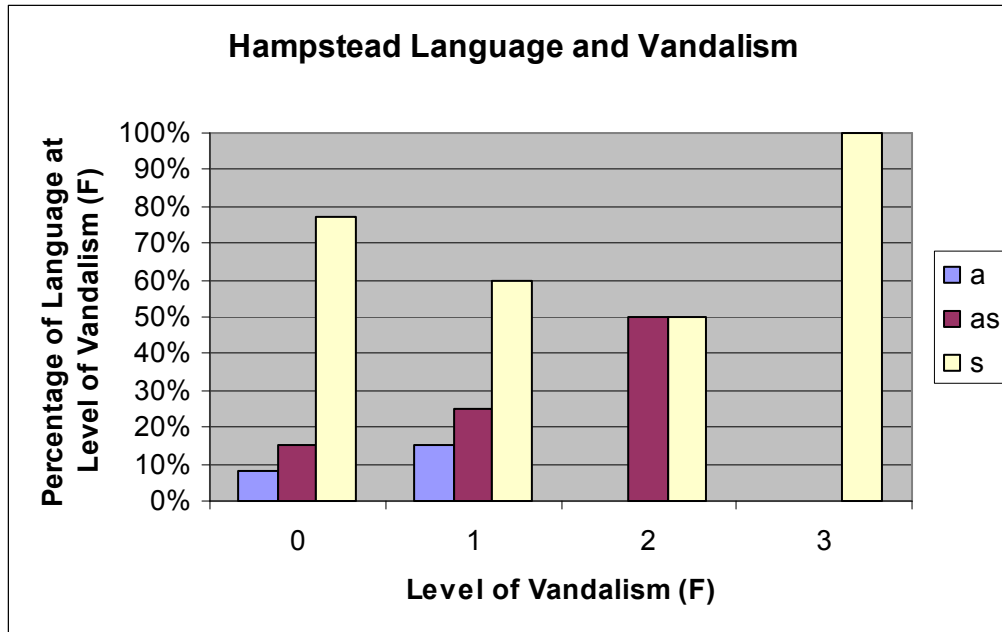


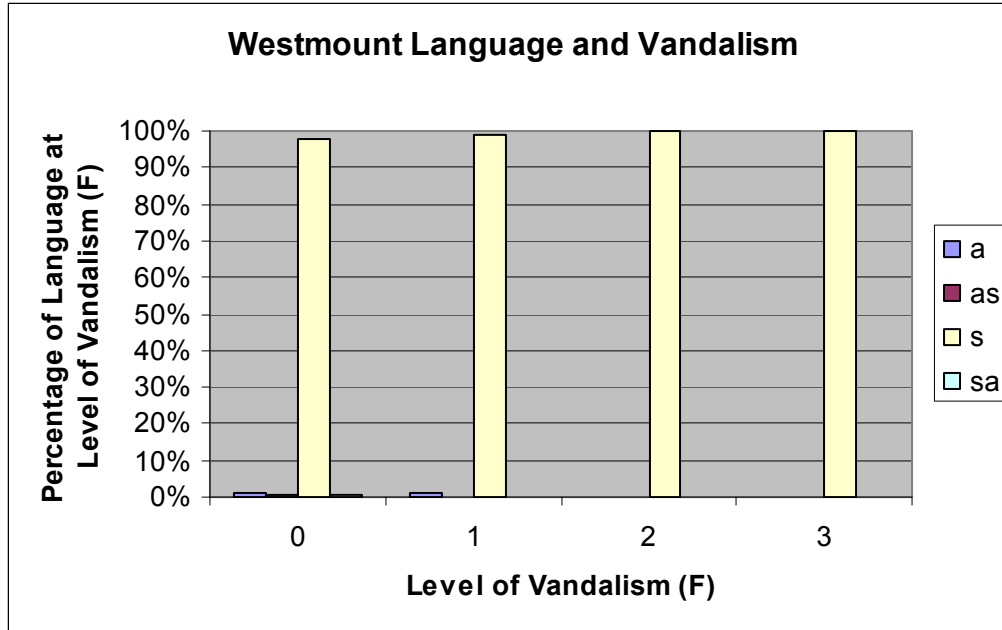
*Language Specific Vandalism (F)*

This pattern of high levels of abuse among “ARRÊT/STOP” signs is not repeated when it comes to Vandalism (F). As with the Damage category, the dominant stop sign language is the most prevalent for each level of Vandalism. In fact, until Hampstead, the “ARRÊT/STOP” signs do not exceed 29% of any level of vandalism. From Levels 0 through 2 however, the Hampstead “ARRÊT/STOP” signs rapidly progress from 15% to 25% to 50% of the composition for each level. While it could be suggested that this is a peculiarly Anglophone form of vindictive stop sign destruction, the lack of a similar pattern in CSL and Westmount suggests that this trend is unique to Hampstead.



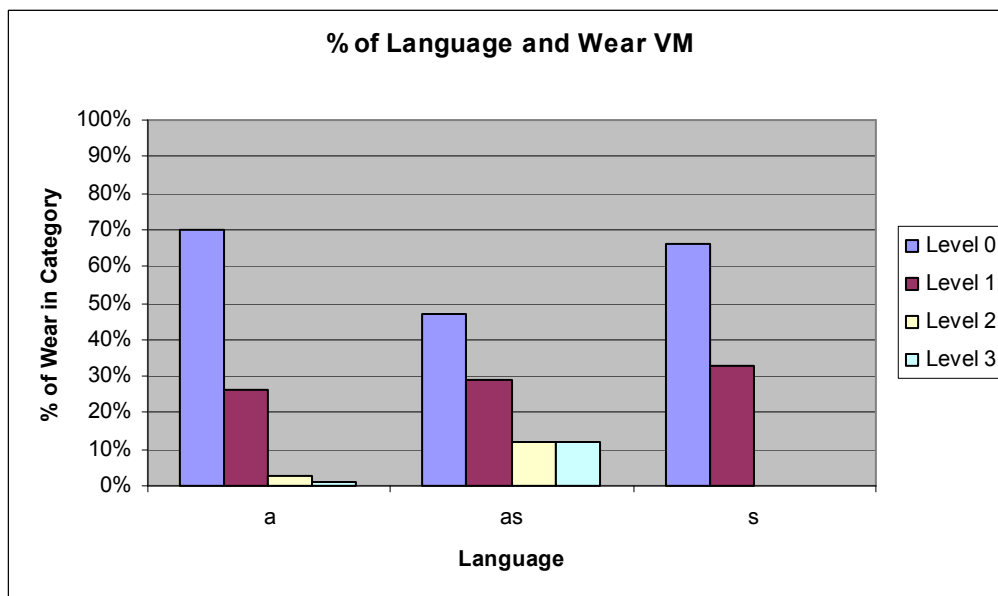




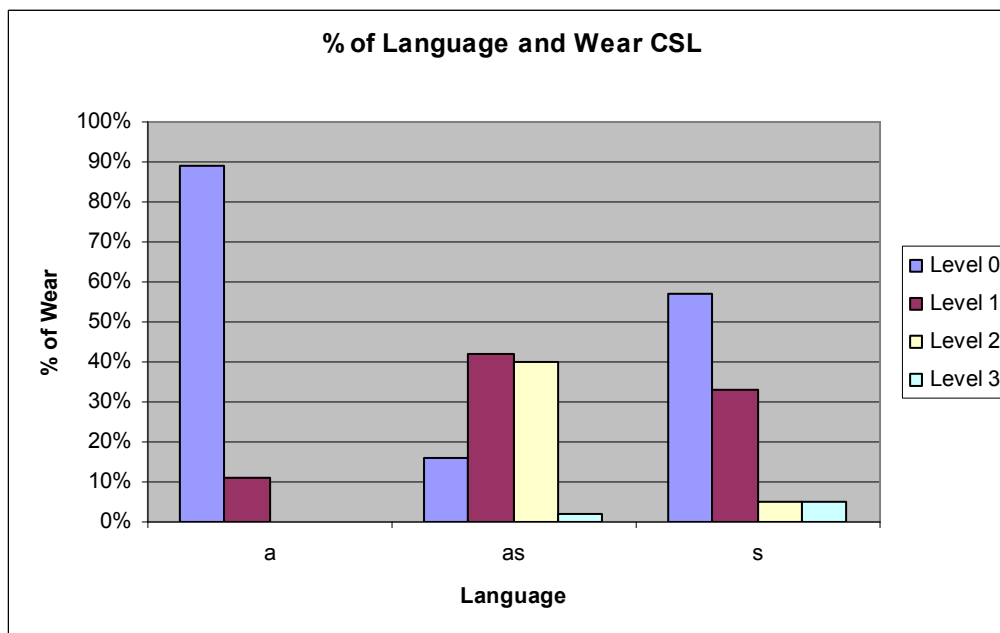
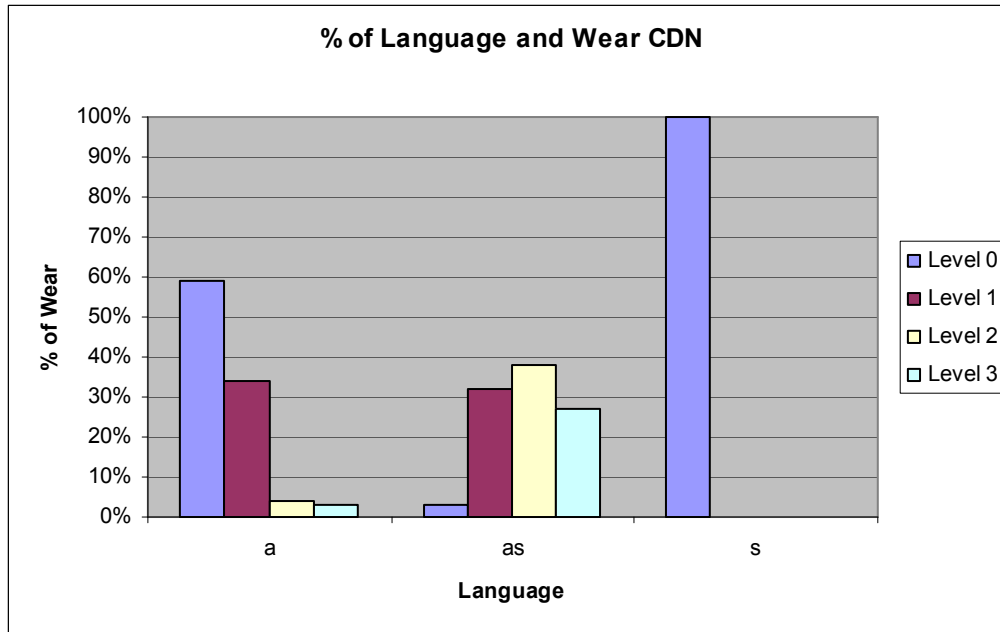


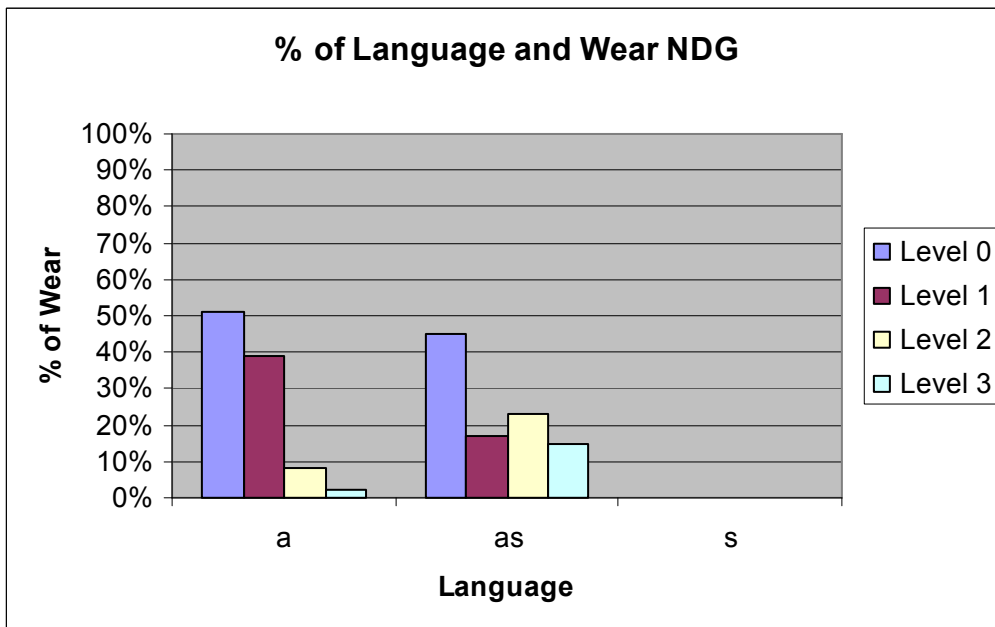
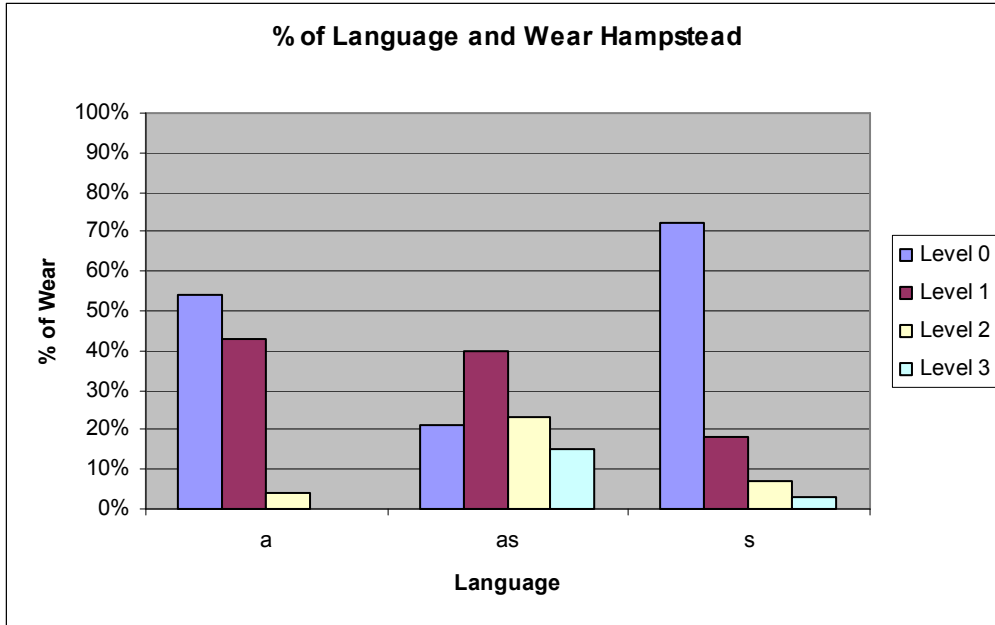
*The relationship between Language and Wear in each Municipality*

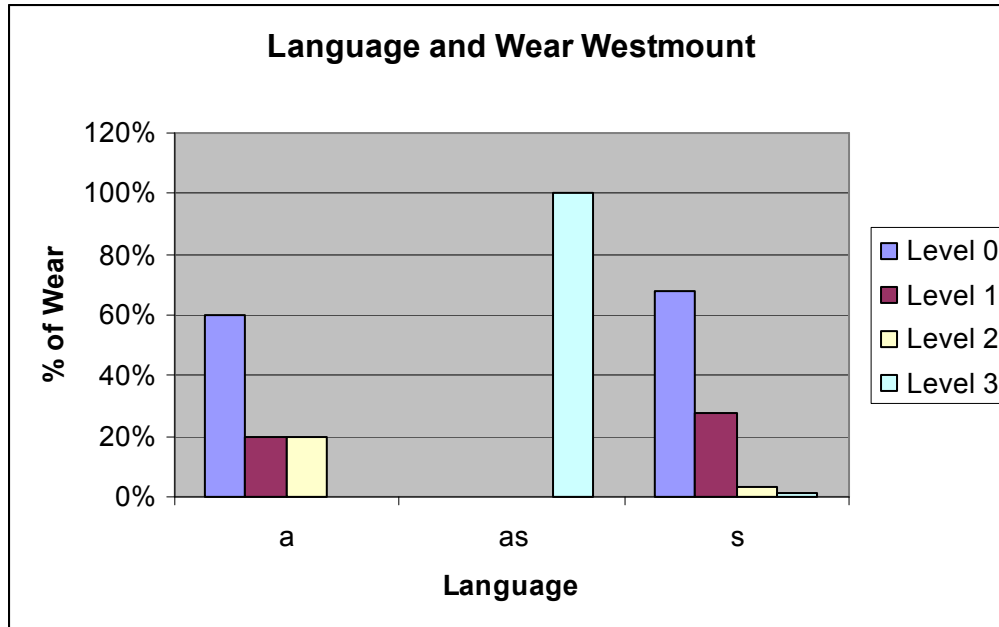
Given the distinct tendency of "ARRÊT/STOP" signs to demonstrate a greater degree of wear than their completely Anglophone or completely Francophone components, a re-examination of the wear category appears to be called for. Accordingly, the language categories were separated out for each municipality, and then the percentage of each level of wear was examined per language. A distinct pattern once again appears in regard to the "ARRÊT/STOP" signs. When considered as a group, they demonstrate both a higher level of wear and a broader range of wear relative to other language categories. In CDN, CSL and Hampstead Level 1 and Level 2 damage dominate the "ARRÊT/STOP" sign category, while in VM and NDG they comprise the second and third most reported levels of wear. Additionally, It should be noted that the "ARRÊT/STOP" statistic for Westmount is anomalous and misleading as it represents the one "ARRÊT/STOP" sign in that municipality, which happens to display Level 3 wear.







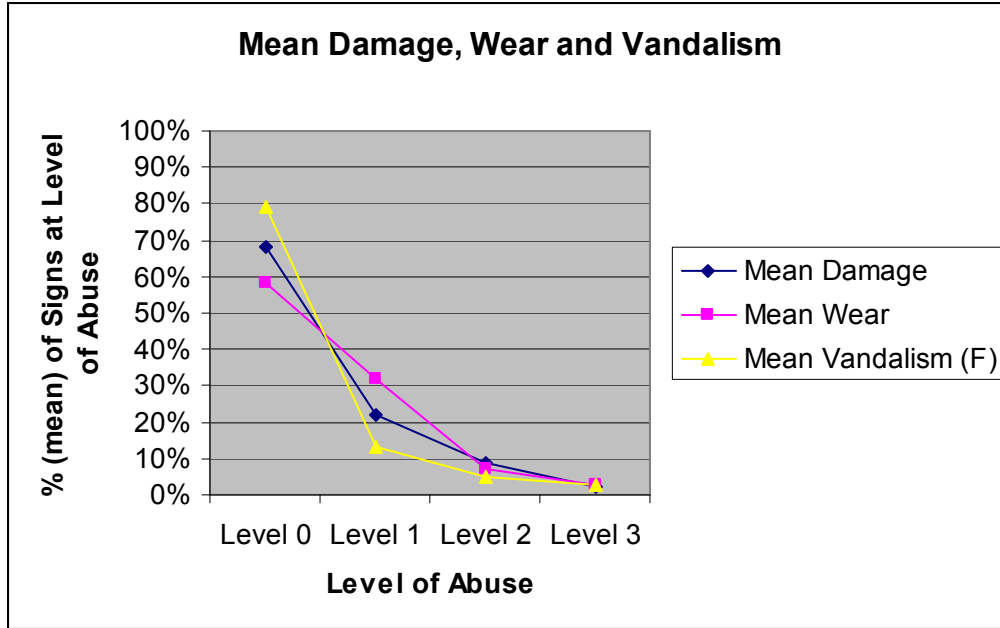




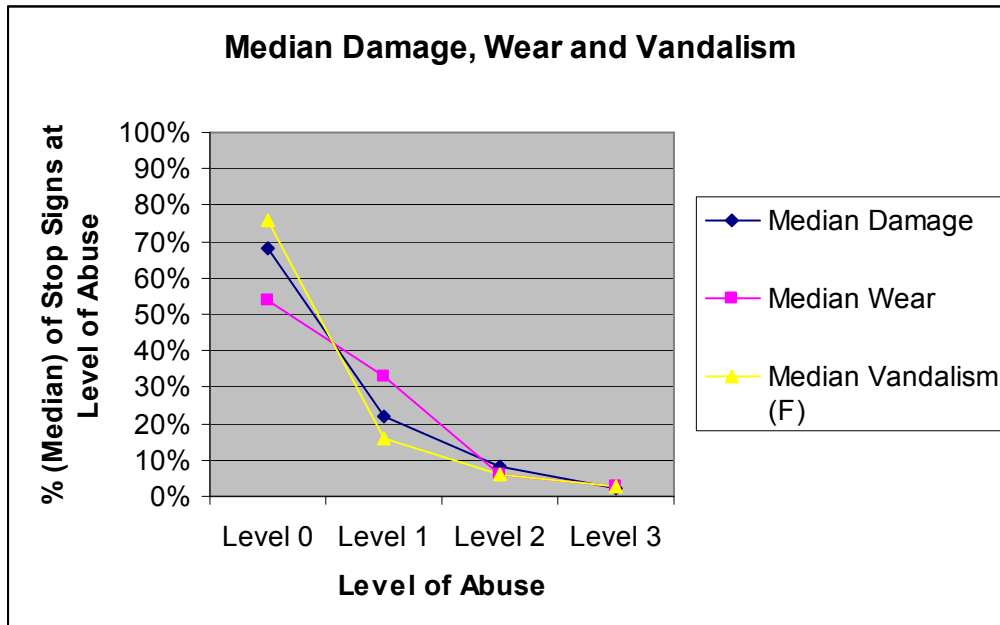
**Discussion**

The first graph in this paper provides a clear demonstration of the bureaucratic divide between independent municipalities (CSL, Hampstead and Westmount) and those areas which are boroughs of the city of Montreal (VM, the Plateau, CDN and NDG). Though both types of region are responsible for replacing their own stop signs through the use of their public works departments, those areas which are completely independent of the city of Montreal have clearly chosen to install "STOP" signs within the last 20 years. The evidence for this can be found in the fact that 70+% of the stop signs at Level 0 of abuse in CSL, Hampstead and Westmount read "STOP". Additionally, of the "STOP" signs at all levels of wear in each of the aforementioned municipalities, the majority display Level 0 of wear. This pervasive lack of wear on "STOP" signs in the independent Anglophone Municipalities in Montreal suggests that stop signs of any language are being deliberately replaced by "STOP" signs.

In addition to the consistent disregard that CSL, Hampstead and Westmount have shown for the language regulation of 1980s, this project has revealed two interesting trends in regards to stop signs in Montreal. The first is that each municipality or borough follows the same general trend in regard to stop sign replacement. The clear pattern, in which the majority of stop signs in each vicinity are at an abuse level of 0, followed by a sharp drop off for levels 1, 2 and 3, is clear in regards to damage, wear and vandalism (f). This pattern suggests that certain regulations exist in order to ensure that most stop signs do not get beyond a certain level of abuse. That both independent municipalities and boroughs of Montreal follow this pattern demonstrates that independent administrations have either collectively agreed upon a pattern of stop sign replacement or arrived at it through a kind of convergent bureaucratic evolution. The following graph (of the mean percentages of stop signs at all of the levels of abuse for all of the regions examined) provides a visual representation of the aforementioned trend:



In order to demonstrate that this trend is not based on values taken from a vast range of data, the ranges of all of these levels of abuse categories can be found in the first section of the paper. Additionally, a graph of the median percentages for the seven regions is provided below:



The inverse trend of decreasing stop signs in relation to intensity of abuse regardless of abuse category is striking, and points to the adoption of remarkably similar stop sign replacement policies in a number of different regions of Montreal. Additionally, it should be noted that of the three categories, vandalism on the front of stop signs appears to be the least tolerable type of abuse, while wear is more likely to go ignored by municipal or borough public works departments.

The second important finding in this study involves the peculiar nature of "ARRÊT/STOP" signs. Unfortunately, these linguistic hybrids appear to be the most worn of signs in any language category, a trend demonstrated in all regions except for Westmount (which can be explained due to the fact that it has only one "ARRÊT/STOP" sign, and the Plateau, which has no "ARRÊT/STOP" signs whatsoever. In every other region, "ARRÊT/STOP" signs all show signs of wear, and also show the broadest range of

levels of wear. The likelihood that "ARRÊT/STOP" sign will demonstrate wear is perhaps indicative of their age, a characteristic which can be correlated with another type of data available in the *Stop: Toutes Directions* database – that of luminescence. Field work involving data collection for this research project has led to the general conclusion that signs which lack luminescence are clearly older than those which display it, a conclusion drawn from subjective observations in the field. Additionally, field work has indicated that signs which display 'flashy' types of luminescence extending in vertical, horizontal or diagonal stops across the face of the stop sign are newer as such signs suffer virtually no damage, wear or vandalism. Further research examining the existence of a correlation between the "ARRÊT/STOP" language category and the presence or absence of luminescence (both mundane and 'flashy') could lead to clues as to the age of the "ARRÊT/STOP" signs, and help to illuminate why they suffer both higher and more varied patterns of wear.

### **References**

"Montreal 'Stop' Sign Controversy Grows". The Canadian Press. April 14 2008.  
<http://news.aol.ca/article/Montreal-Stop-Sign-Controversy-Grows/156704/>

**Appendix A: Language Composition of Municipalities**

	Total	Arrêt	Arrêt %	Arrêt/ Stop	Arrêt/ Stop %	Stop	Stop%	Stop/ Arrêt	Stop/ Arrêt %
<b>VM</b>	300	274	91%	17	6%	9	3%	0	0%
<b>CDN</b>	458	417	91%	37	8%	1	0.20%	1	0.20%
<b>CSL</b>	366	9	2%	53	14%	304	83%	0	0%
<b>HAMP</b>	341	28	8%	57	17%	256	75%	0	0%
<b>NDG</b>	622	569	91%	53	9%	0	0%	0	0%
<b>WEST</b>	454	6	1%	4	1%	443	958%	1	0.20%

**Appendix B: Percentage of Stop Signs at Levels of Damage for Each Municipality**

	Level 0	Level 1	Level 2	Level 3
Plateau	68%	23%	8%	1%
VM	55%	26%	13%	5%
CDN	62%	22%	12%	3%
CSL	74%	20%	5%	1%
Hampstead	72%	23%	4%	1%
NDG	73%	18%	7%	2%
Westmount	63%	20%	11%	6%

**Appendix C: Percentage of Stop Signs at Levels of Wear for Each Municipality**

	Level 0	Level 1	Level 2	Level 3
Plateau	54%	40%	5%	0.04%
VM	68%	26%	4%	2%
CDN	54%	33%	6%	5%
CSL	51%	33%	9%	7%
Hampstead	63%	24%	9%	5%
NDG	51%	37%	9%	3%
Westmount	67%	28%	6%	1%

**Appendix D: Percentage of Stop Signs at Levels of Vandalism(F) for Each Municipality**

	Level 0	Level 1	Level 2	Level 3
Plateau	70%	19%	7%	4%
VM	70%	16%	9%	5%
CDN	87%	8%	2%	3%
CSL	91%	4%	2%	2%
Hampstead	93%	6%	1%	0%
NDG	76%	17%	6%	2%
Westmount	69%	19%	8%	4%