

## **Change and Stability Within an Urban Hierarchy Waterloo County 1864 to 1971**

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# ***Change and Stability Within an Urban Hierarchy: Waterloo County 1864 to 1971***

***Fred Dahms***

This research note will present an analysis of the changing functional complexity of all settlements having economic functions in Waterloo County between 1864 and 1971. Its purpose is to assess the stability of the urban hierarchy there over 107 years, and to provide data which will enable us to compare urbanization processes in several areas of North America.

Earlier work in predominantly rural counties of Ontario, and research on urban systems in the United States has shown that places established early as ports or at water power sites have tended to remain at or near the top of their local hierarchies.<sup>1</sup> It has been suggested that they acquired economic and political influence which helped them to obtain early roads, industry and railroads. Thereafter, historical "inertia" has enabled such places to thrive, while their later rivals have often prospered or declined more dramatically with changing economic conditions.<sup>2</sup>

By examining the evolution of settlements in what has become a highly urbanized regional municipality, we will contribute comparative evidence to earlier work in rural areas of Ontario.<sup>3</sup>

We may also be able to suggest some widely applicable generalizations about the development of settlement systems in the province. With its focus on a group of settlements and the relationships among them through time, this research emphasizes structural urbanization as discussed recently by Gilbert Stelter and earlier by others.<sup>4</sup> It is concerned with the concentration of people, organizations and activities within settlements organized into hierarchic systems. Here we will concentrate upon the changing economic functions and populations of the settlements in Waterloo County, and

on the resultant changes in the urban hierarchy there.

## ***Data Sources***

This article describes the Waterloo hierarchy in 1864, 1881 and 1971. It then assesses major changes in the century between 1871 and 1971 (Fig.1). Eighteen sixty-four is the first year for which comparable functional statistics were available, and 1881 was the year of the largest number of settlements in the county. After 1971, local government reorganization made it almost impossible to obtain data on individual municipalities which had existed earlier.<sup>5</sup>

Functional changes in settlements are faithfully reflected by the major data source, Dun and Bradstreet *Reference Books*. In the early years these listed the name and type of every business in the county, along with their credit ratings. Tabulations included every location where a business enterprise was located, producing a more complete listing than that provided by the census.<sup>6</sup> More recently, the four digit Standard Industrial Classification System has replaced earlier descriptions. Functional data for 1971 have been stored and processed by computer which has produced all summaries and analyses for that period. Information for early years has been extracted, tabulated and analyzed by hand.

## ***Terminology***

In this discussion, functional units are used as a measure of the functional complexity of settlements. A function is a type of economic activity (such as banking), an establishment is a building where a function occurs, and a functional unit is one economic activity found in an establishment. Thus a grist mill combined with a distillery, or a general store/post office would each be one es-

tablishment containing two functional units. For the early days when several functions were combined in one building, a count of functional units provided the most accurate indication of a settlement's functional complexity. The more recent four digit codes also effectively represent functional units, since several codes are often ascribed to activities in the same building.

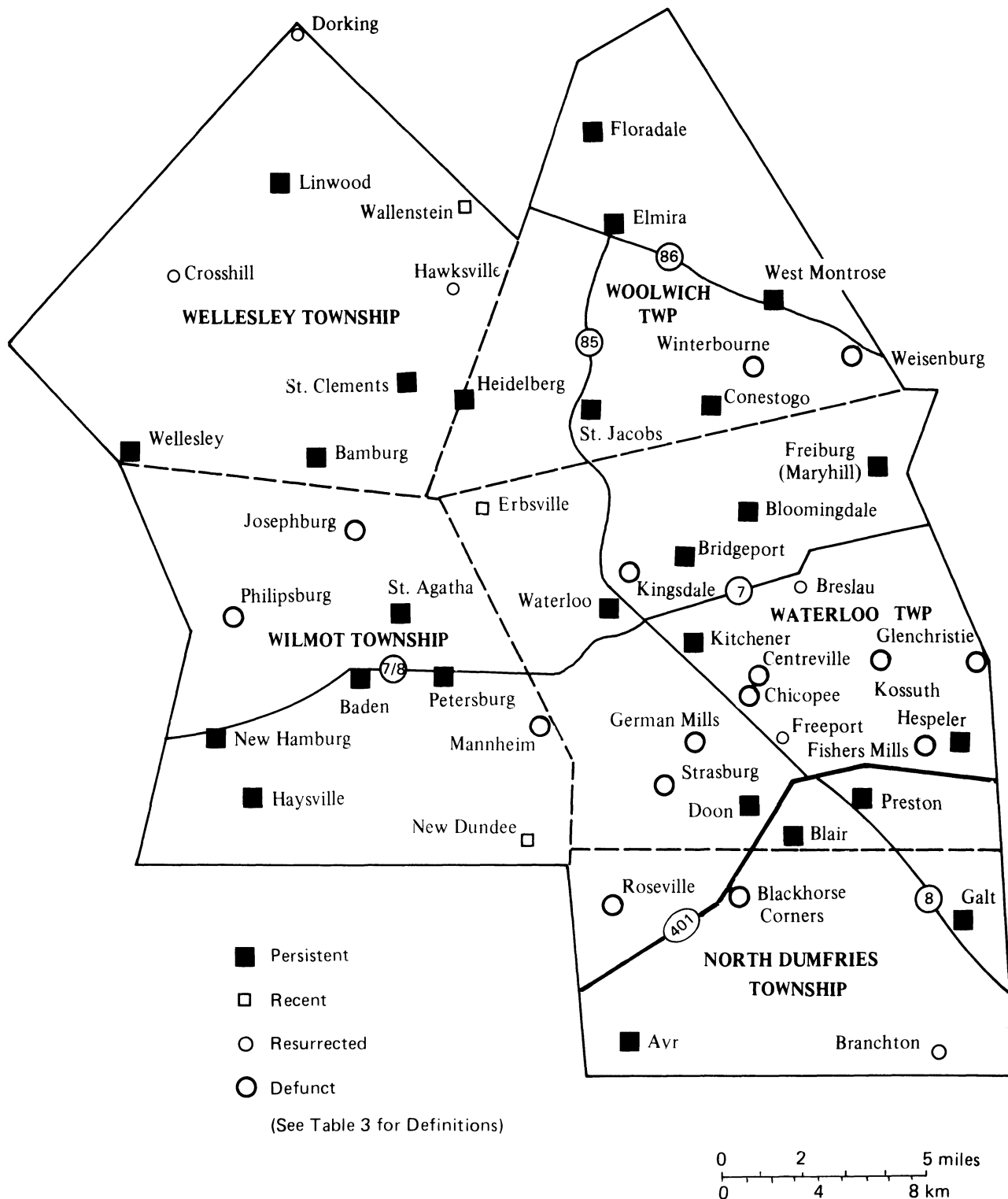
## ***The Early Years***

Waterloo County was originally settled in 1800 when two Pennsylvania Germans purchased land near what became Blair (Fig. 1). They were followed in rapid succession by 14 others who also settled in 1800.<sup>7</sup> By July 1, 1805, some 35 families or single men had settled on property that they owned in Waterloo County. Almost all were Mennonites from Lancaster County, Pennsylvania. The enterprise with which they rapidly transformed an area of virgin forest into a prosperous agricultural area with rapidly growing urban settlements is well documented elsewhere.<sup>8</sup> Here we will concentrate on the economic evolution of the area as reflected by statistics describing population and settlement functions.

## ***The Hierarchy in 1864***

By 1864, the Waterloo County area had been settled for over 50 years and a local urban system was beginning to develop. Even then, Dun and Bradstreet recorded 31 places having a total of 352 functional units (Table 1). At that time, Galt led with 80 functional units, followed by Berlin (Kitchener after 1916) with 49. Lower in the hierarchy, we find Waterloo (32) Preston (31), Ayr (27) and New Hamburg (23). At the bottom, Roseville and St Agatha had only one functional unit each. St Jacobs (12), Elmira (10), Hespeler (9), and Conestogo (9) were

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**Figure 1: All Settlements Having Economic Functions in Waterloo County, 1871-1971**

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**TABLE 1:**  
***The Settlement Hierarchy: Waterloo County 1864***

Place	Number of Functional Units	Percentage of Functional Units	Rank
Galt	80	22.73	1
Berlin	49	13.92	2
Waterloo	32	9.09	3
Preston	31	8.81	4
Ayr	27	7.67	5
New Hamburg	23	6.53	6
St. Jacobs	12	3.41	7
Elmira	11	3.13	8
Conestogo	9	2.56	9
Hespeler	9	2.56	9
Hawksville	6	1.70	11
Haysville	6	1.70	11
Bridgeport	6	1.70	11
Crosshill	6	1.70	11
Wellesley	5	1.42	15
Baden	5	1.42	15
Philipsburg	4	1.14	17
Linwood	3	0.85	18
St. Clements	3	0.85	18
New Dundee	3	0.85	18
Doon	3	0.85	18
Freiburg	3	0.85	18
Allansville	2	0.57	23
Weimer	2	0.57	23
Petersburg	2	0.57	23
Breslau	2	0.57	23
Winterbourne	2	0.57	23
Heidelberg	2	0.57	23
Branchton	2	0.57	23
Roseville	1	0.28	30
St. Agatha	1	0.28	30
<b>Total</b>	<b>352</b>	<b>100.00</b>	<b>31</b>
<b>Percentage of Functional Units in:</b>			
Top 3 Places		45.74	
Top 5 Places		62.22	
Top 10 Places		82.10	

Source: Dun and Bradstreet, Reference Book, 1864.

beginning to challenge the middle level centres, although they were not to share equally in subsequent economic development.

Even in 1864, a distinct urban hierarchy was evident among settlements in Waterloo County. Galt, with its excellent site along the Grand River, contained over 23 percent of all functional units (Table 1). Berlin was well behind at 14 percent while Waterloo, Preston, Ayr and New Hamburg formed another distinct group with between six and nine percent of all functional units. Below these four, no other settlement had more than 3.41 percent of the county's functional units. In 1864, the three largest settlements contained almost 46 percent of all functional units, while over 62 percent were centralized in the top five (Table 1). The largest third of the settlements contained among them over 80 percent of all functional units in the county.

### ***1871 to 1881: Competition and Centralization***

By 1871 there were 38 places listed in the *Reference Book* and the total number of functional units had increased to 849 (Table 2). Galt continued to lead with 155, while Berlin had 92 functional units, Waterloo 70, New Hamburg 55, Ayr and Elmira 46 each, Preston 36 and Hespeler 33 (Table 4). Fisher Mills and Freiport (more recently Freeport) each had one functional unit. New Hamburg had risen from 6th to 4th in the hierarchy since 1864, while Elmira and Ayr had both surpassed Preston to tie for 5th. By 1871, Hespeler had more than tripled in functional units and St Jacobs had more than doubled. At this date, they ranked 8th and 10th respectively, as against 9th and 7th in 1864. Already their rank-order and rates of growth were changing in

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response to locational factors to be discussed below.

### **1881**

As the year with the largest number of settlements, 1881 deserves special attention. At that time, communities were widely dispersed across the county, providing easy access during a return trip of one day for anyone with a horse and carriage. The pattern in this period was similar to that described by Walter Christaller's Central Place theory.<sup>9</sup> Numerous places with one or two functions had developed at road intersections to provide a hotel, general store or blacksmith. Potential consumers had more convenient access to a larger number of settlements in the county than at any other time, before or since.

By 1881 there were 44 places with economic functions in Waterloo County. The urban population was 14,664, comprising 34 percent of the total (Table 2). Change in the rural-urban balance had already begun. Rural population had declined by 2.8 percent and urban population had increased by 28.9 percent since 1871, notwithstanding total population growth of only 6.2 percent. Because of the addition of six settlements in 10 years, the average population per place had declined to 971, but centralization of economic functions was clearly evident in the 23.5 percent increase in functional units per place to 27.5 by 1881 (Table 2).

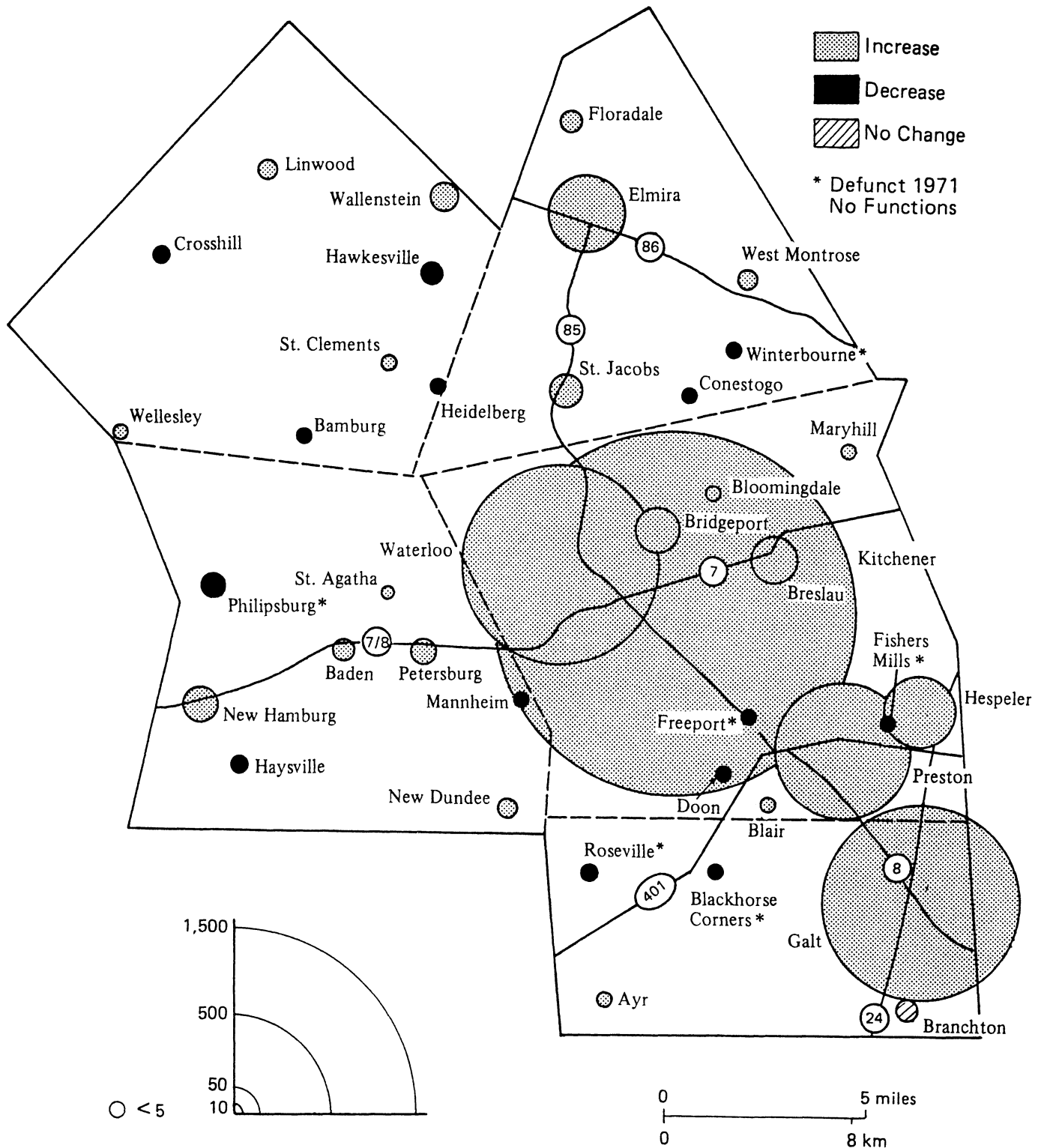
By 1881, the top of the hierarchy consisted of Galt, Berlin, New Hamburg, Waterloo and Preston, with only one functional unit separating New Hamburg (86) and Waterloo (85). Berlin's 168 functional units comprised 83.6 percent of the 201 in Galt by 1881, as opposed to only 59 percent of Galt's 1871 total of 155.

**Table 2:**  
**Functional and Population Data: Waterloo County 1871, 1881, 1971**

Year	1871	1881	1971	1871-1971 Change
No. of Functional Units	849	1212	3860	+3011
Percentage Change	-	42.8%	218.5%	+248.4%
No. of Settlements	38	44	32	-6
Percentage Change	-	15.8%	-27.3%	-13.6%
Total Population	40251	42740	254035	+213784
Percentage Change	-	6.2%	494.4%	+500.2%
Urban Population	11372	14664	222790	+211418
Urban Population as % of Total Population	28.3	34.3	87.7	+59.4
Percentage Change	-	28.9%	1419.3%	+1859.1%
Rural Population	28879	28076	31250	+2371
Rural Population as % of Total Population	71.7	65.7	12.3	-59.4
Percentage Change	-	-2.8%	11.3%	+8.2%
Functional Units per Place	22.3	27.5	120.6	+98.3
Percentage Change in Units per Place	-	23.52%	337.82%	+440.81%
Population per Place	1059	971	7939	+6879
Percentage Change per Population per Place	-	-8.30%	717.26%	+649.5%

Source: Dun and Bradstreet, Reference Books, 1871-1971; Statistics Canada, Census of Population, 1871-1971.

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**Figure 2: Change in the Number of Functional Units in Waterloo County Settlements: 1871-1971**

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Trends of competition and centralization to become much stronger by the turn of the century were already in evidence in 1881.

### ***Persistence And Change: 1871 to 1971***

Between 1871 and 1971, the forces of centralization had become clearly evident

(Table 2). Despite a decrease of 27 percent in the number of settlements to 32, the urban population had increased to 88 percent, and rural population had declined to only 12 percent of the total. By 1971, the average population per place was 7939, and there was an average of 121 functional units per

place. The aggregate statistics describing change from 1871 to 1971 reflected consolidation of economic activities in fewer, larger settlements by the end of the century (Table 2).

Settlements at the top of the hierarchy in 1871 continued to thrive until 1971 even

**Table 3:**  
***All Settlements in Waterloo County Listed as Having Economic Functions by Dun and Bradstreet Directories: 1871–1971***

Defunct No Functions Listed in 1971	Resurrected Listed in 1871 and 1971 But Not in all Intervening Years	Recent First Listing After 1871	Persistent Listed Continuously Since 1871
Blackhorse	Branchton	Ebsville	Ayr
Centreville	Breslau	New Dundee	Baden
Chicopee	Crosshill	Wallenstein	Bamberg
Dorking	Hawkesville		Berlin (Kitchener)
Fisher Mills	Freeport		Blair
German Mills			Bloomington
Glen Christie			Bridgeport
Josephburgh			Conestogo
Kossuth			Doon
Kingsdale			Elmira
Mannheim			Floradale
Philipsburg			Galt
Roseville			Haysville
Strasburg			Heidelberg
Weisenburg			Hespeler
Winterbourne			Linwood
			Maryhill (Freiburg)
			West Montrose
			New Hamburg
			Petersburg
			Preston
			St. Agatha
			St. Clements
			St. Jacobs
			Waterloo
			Wellesley

Source: Dun and Bradstreet, Reference Books, 1871–1971.

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**Table 4:**  
**Functional Units by Location: Waterloo County 1871 and 1971**

Place	1871 Units	Rank	Place	1971 Units	Rank
Galt	155	1	Kitchener	1580	1
Berlin	92	2	Galt	625	2
Waterloo	70	3	Waterloo	546	3
New Hamburg	55	4	Preston	291	4
Ayr	46	5	Elmira	138	5
Elmira	46	5	Hespeler	116	6
Preston	36	7	New Hamburg	80	7
Hespeler	33	8	Bridgeport	54	8
Wellesley	30	9	Ayr	51	9
St. Jacobs	28	10	St. Jacobs	51	9
Hawkesville	23	11	Breslau	46	11
New Dundee	22	12	Wellesley	32	12
Bridgeport	17	13	New Dundee	31	13
Conestogo	16	14	Baden	26	14
Baden	15	15	Petersburg	23	15
St. Clements	15	15	Linwood	19	16
Crosshill	13	17	Wallenstein	17	17
Philipsburg	12	18	St. Clements	17	18
Heidelberg	11	19	Conestogo	14	19
Linwood	10	20	Floradale	14	19
Freiburg	10	21	Hawkesville	12	21
Haysville	9	22	Maryhill	12	21
Brachton	9	22	West Montros	11	23
Petersberg	9	23	St. Agatha	11	23
Doon	8	24	Bloomingtondale	10	25
Breslau	7	25	Blair	10	25
Roseville	7	25	Branchton	9	27
St. Agatha	7	25	Crosshill	5	28
Bamberg	6	26	Heidelberg	5	29
Winterbourne	6	26	Doon	2	30
Blair	5	27	Haysville	1	31
Blackhorse	5	27	Bamberg	1	31
Bloomingtondale	5	27			
Mannheim	4	28			
Floradale	3	29			
West Montrose	2	30			
Freiport	1	31			
Fisher Mills	1	31			
<b>Total</b>	<b>849</b>	<b>38</b>		<b>3860</b>	<b>32</b>

Source: Dun and Bradstreet, Reference Books, 1871, 1971.

though the rank order changed and Wellesley fell from the top ten (Figure 2; Table 4). There was stability among the largest centres, while the smallest places were most volatile in functional and population change (Table 3). Their numbers had declined with the improvement of roads and more widespread use of the motor vehicle of 1930.<sup>10</sup> By 1971, six places had lost all their economic functions and a number had dropped to lower levels in the hierarchy (Table 4). Those losing were generally far from the major roads and largest settlements.

### *Changes in Functional Complexity*

The two largest settlements, Galt and Kitchener, had reversed in order by 1971, with Kitchener rising to the top of the hierarchy. Kitchener also exhibited the greatest absolute (1580) and percentage (1617) increase in functional units during the century under consideration. Waterloo remained in third place, not far behind its rival Galt, which in 1871 still had over twice as many functional units as Waterloo (Table 4). But in the years from 1871 to 1971, Waterloo's absolute increase (476) was slightly greater than that of Galt, while its percentage increase (9680) was over twice that of its southern rival. Preston added 255 functional units and in percentage terms (708) actually exceeded the changes in both Galt and Waterloo. Elmira and Hespeler each made absolute gains over 80, and percentage increases above 200 between 1871 and 1971.

Bridgeport was the only place in the top ten in 1971 that had not reached this level by 1871. It had added 37 functional units (218%) to its 1871 total of 17 to rank eighth by 1971. Breslau made even larger absolute (39) and percentage (557) gains, but remained below Bridgeport in the



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hierarchy in 1971, ranking eleventh. Since Ayr and St Jacobs were tied at 9 with 51 functional units each in 1971, Breslau did not qualify for a place in the top ten. Nevertheless its upward movement of 14 ranks was impressive. Elmira's striking increase of 92 functional units (200%) moved it up one rank.

Philipsburg experienced the greatest loss of functional units, dropping from 12 in 1871 to none in 1971. It was followed by Hawkesville which fell from 23 to 12. Crosshill declined from 13 to 5 and Roseville from 7 to none. New Dundee increased by 9 functional units but dropped one rank to 13th. Generally, there was relative stability near the top of the hierarchy, where all places made gains and where rank changes were minor. Below the first ten, change was much more erratic, with six settlements losing all their economic functions, and others gaining or losing a few (Table 4).

### ***Location and Place in the Hierarchy***

When the locations of gainers and losers are analyzed, a distinct pattern emerges (Fig. 2). Nine of the 10 places increasing in rank were along major highways (7, 8, 24, 85, 86, 401). Twelve of the 14 places that gained functional units were on these highways, while none that lost were served by any major highway. The greatest increases were recorded by Kitchener, Waterloo and Galt. They were the three largest settlements in both 1871 and 1971, and were all at the intersection of several major highways. Proximity to these large and rapidly growing centres has had a positive effect on the increasing functional complexity of nearby places such as Preston and Hespeler. Others such as Freeport,

Centreville, Chicopee, Kingsdale and Mannheim were simply inundated by their larger neighbours by 1971 (Table 3; Fig. 1).

By 1971, settlements which had been separate and independent for many years had begun to coalesce. Preston and Hespeler were becoming functionally integrated with Galt, and after 1972 were amalgamated into the municipality of Cambridge.<sup>11</sup> Since regional government reorganization, Bridgeport has been absorbed by Kitchener, while Kitchener and Waterloo have always been indistinguishable as the "twin cities" of Ontario. Urban growth has extended west from Kitchener towards Baden, Petersburg and New Hamburg while Waterloo is growing rapidly north to St. Jacobs and Elmira. Breslau is now almost contiguous with built-up Kitchener. On the other hand, almost all places that lost functions and rank are off the major highways, relatively isolated from the larger centres, and several are at the extremities of the county (Figure 2).

### ***Competition and Centralization***

By 1971, the process of competition and sorting had reduced the number of settlements to 32, even though the total number of functional units in the county had risen to 3860. There were 120.6 functional units per settlement in 1971 as against 22.3 in 1871, a clear indication of the centralization of economic activity in fewer, larger places by 1971.

In 1871, the top five settlements contained 49.2 percent of all functional units. By 1971 this figure had reached 74.7 percent. In 1871, 37.7 percent of functional units were found in Galt, Berlin and Waterloo, but by 1971, Kitchener, Galt and Waterloo con-

tained 71.3 percent; a 34 percent increase in a century. The top ten in 1871 contained 69.6 percent of functional units as against 90.9 percent in 1971.

### ***Discussion***

There has been great stability in the hierarchical ordering of settlements in Waterloo County between 1871 and 1971. A century of change has produced considerable centralization of population and functions in the very places that were at the top of the hierarchy from the beginning. In fact, nine of the 10 places at the top of the hierarchy in 1864 remained there, although in slightly different order, until 1971. Conestogo was the exception, with its drop from 9th to 19th by 1971.

In 1871 and 1881, the top 10 were the same, but in slightly different order, while five additional small places had developed to serve consumers at the periphery of the county by 1881. By 1971, these and seven others had lost all their economic functions. Population had also continued to centralize in the largest places during the century being discussed (Table 2).

### ***Some Comparative Data***

A comparison of the situation in Waterloo County with two other areas confirms the notion that centralization is closely correlated with the level of urbanization. Earlier work in rural Huron and southern Bruce counties showed that the top three settlements there contained 21.1 percent of business establishments in 1891, and 37.5 in 1981.<sup>12</sup> For Wellington County, adjacent to Waterloo, comparable percentages for 1881 and 1970 were 48.7 and 65.3.<sup>13</sup> This parallels the 37.3 percent in 1871 and 71.3 percent in the three largest places in Waterloo in 1971.

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The greatest degree of centralization had occurred in the most urbanized of these areas, Waterloo County, while the most rural, Huron, showed the least concentration in its top three settlements.<sup>14</sup>

By 1971, 87.7 percent of Waterloo's population was classified as urban as against 36.3 for Huron/south Bruce and 70.9 for Wellington.<sup>15</sup> In 1871, 91 percent of Huron/south Bruce population was classified as rural compared to 72 percent for Waterloo and 79 percent for Wellington. From these data, it appears that the process of centralization occurs earlier and proceeds farther in areas that have become heavily urbanized.

Occasionally, a settlement with an inferior location or physical site may outstrip its rivals because of local entrepreneurial efforts, boosterism and political influence. In Waterloo County this was the case for Berlin/Kitchener, whose site was inferior to that of local rivals Galt, Preston and Hespeler, not to speak of that of Guelph in Wellington County.<sup>16</sup>

Elizabeth Bloomfield has carefully documented the way in which residents of Berlin worked to acquire the technology and influence to propel Kitchener into a pre-eminent place in the local hierarchy after the turn of the century. By 1991, it was the undisputed leader in the area, surpassing both Galt and Guelph.<sup>17</sup> While early establishment and an excellent site and situation are important, we must never lose sight of the human factor in urban growth and development.

### **Conclusion**

This paper has confirmed earlier findings in rural Ontario and in the United States that settlement hierarchies are indeed very stable through time. Historical "iner-

tia", or momentum, as I prefer to describe it, has contributed to this stability. As areas become settled, the best sites are often selected first simply because they offer the settler the greatest initial advantages such as a port, river crossing, or water power.<sup>18</sup>

As time goes on, locations with these attributes acquire the economic strength and influence to obtain technological innovations in transportation and industry.

It appears that the processes of structural urbanization function to various degrees in both rural and urban areas. They also operate at different scales. We have seen their manifestations in local systems such as those in Waterloo and Wellington, and on a continental scale in the systems described by James Simmons.<sup>19</sup> The findings reported here suggest that the centralization of functions occurs more quickly, and in fewer larger settlements, in systems that become heavily urbanized. In rural areas, the concentration of functions is slower and less pronounced. While there may be no "laws" controlling the development of urban hierarchies, there are certainly sets of parallel processes that operate in a similar manner, in both rural and urban areas, and across much of the western world.

### **Notes**

1. Numerous studies have come to this conclusion. A few are John R. Borchert, "America's Changing Metropolitan Regions," *Annals, Association of American Geographers* 62 (1972): 352-73; Allan Pred, *City Systems in Advanced Economies* (London, 1977); John F. Hard, Neil E. Salisbury, and Everett G. Smith Jr., "The Dying Village and Some Notions About Urban Growth," *Economic Geography* 44 (1968): 343-49; Fredrick A. Dahms, "The Evolution of Settlement Systems: A Canadian Example" in *Cities and Urbanization: Canadian Historical Perspectives*, ed. Gilbert A. Stelter (Toronto, 1990): 177-207, which cites and discusses much of the earlier literature on urban systems.
2. Hart et. al., 1968; Carle C. Zimmerman and Gary W. Moneo, *The Prairie Community System* (Ottawa, 1971); John U. Marshall and W. R. Smith, "The Dynamics of Growth in a Regional Urban System: Southern Ontario, 1851-1971," *The Canadian Geographer* 22 (1978): 22-40; Fredrick A. Dahms, "The Process of Urbanization in the Countryside: A Study of Huron and Bruce Counties, Ontario, 1891-1981," *Urban History Review* 12 (1984): 1-18; Dahms, "Regional Urban History: A Statistical and Cartographic Survey of Huron and Southern Bruce Counties, 1864-1981," *Urban History Review* 15 (1987): 254-68.
3. Dahms, 1984, 1987; *The Heart of the Country: From the Great Lakes to the Atlantic Coast - Rediscovering the Towns and Countryside of Canada* (Toronto, 1988); "Settlement Dynamics, Migration and Commuting: Western Ontario 1971-1985" in *Essays on Canadian Urban Process and Form III: The Urban Field*, ed. P.M. Coppack, L. H. Russwurm and C. R. Bryant (Waterloo, 1988): 157-91
4. Gilbert Stelter, "Introduction" in Stelter, ed., 1990: 5-8; Bruce M. Stave, "A Conversation with H. J. Dyos: Urban History in Great Britain," *Journal of Urban History* 5 (1975): 469-500
5. W. H. Palmer, *Report of the Waterloo Region Review Commission* (Waterloo, 1979)
6. In the early days, Dun and Bradstreet *Reference Books* listed every location having an economic activity, including many not tabulated by census enumerators.
7. G. E. Reaman, *The Trail of the Black Walnut* (Toronto, 1974); G. Leibbrandt, *Little Paradise: The Saga of German Canadians of Waterloo County, Ontario, 1880-1975*, Trans. G.K. Weissenborn (Kitchener, 1980); J. English and K. McLaughlan, *Kitchener: An Illustrated History* (Waterloo, 1983).
8. Ibid.; Elizabeth Bloomfield, "City-building Processes in Berlin/Kitchener and Waterloo, 1870-1930," (Ph.D. Thesis, University of Guelph); "Building the City on a Foundation of Factories: The Industrial Policy in Berlin, Ontario, 1870-1914," *Ontario History* 75 (1983): 207-43.
9. There is vast literature on this topic. An excellent recent discussion may be found in John U. Marshall, *The Structure of Urban Systems* (Toronto, 1989).
10. Gerald Bloomfield, "No Parking Here to Corner: London Reshaped by the Automobile, 1911-61," *Urban History Review* 18 (1989): 139-158 has reviewed much of the literature on this topic.
11. Palmer, 1979.
12. Dahms, 1987.

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13. F. A. Dahms, "The Role of the Country Town in Ontario Yesterday and Today: The Case of Wellington and Huron Counties," in *The Country Town in Rural Ontario's Past*, ed. A. A. Brookes (Guelph, 1981): 56-79.
14. Ibid.
15. Dahms, 1981, 1987.
16. Dahms, 1990.
17. E. Bloomfield, 1981, 1983.
18. See for example, Jacob Spelt, *Urban Development in South Central Ontario* (Ottawa, 1983); Dahms, 1990; J. D. Wood, ed. *Perspectives on Landscape and Settlement in Nineteenth Century Ontario* (Ottawa: Carleton Library, 1975); R. C. Harris and J. Warkentin, *Canada Before Confederation* (Toronto: Oxford, 1974).
19. James Simmons, "The impact of the Public Sector on the Canadian Urban System" in *Power and Place: Canadian Urban Development in the North American Context* ed. Gilbert A. Stelter and Alan F. J. Artibise (Vancouver: University of British Columbia press, 1986): 21-50.