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Publisher: Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK

Journal of Geography

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/rjog20>

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Published online: 08 Feb 2008.

To cite this article: John L. Rich (1917) An Instance of the Changing Value of Geographical Location, Journal of Geography, 15:6, 185-189, DOI: [10.1080/00221341708984019](https://doi.org/10.1080/00221341708984019)

To link to this article: <http://dx.doi.org/10.1080/00221341708984019>

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AN INSTANCE OF THE CHANGING VALUE OF GEOGRAPHICAL LOCATION

By JOHN L. RICH
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THERE are two distinct types of geographical location—physical, or physiographical; and vicinal.* By physiographical location is meant position on the earth's surface with respect to such physical factors as altitude, land forms, streams or water bodies, latitude, and climate. By vicinal location is meant position with respect to the various elements of the human environment such as centers of population and culture, markets, or neighboring social groups. Of these the values of the elements of physical environment are essentially fixed or change so slowly that the change can scarcely be noticed. Those of the human environment, on the other hand, since they involve mobile living organisms, are constantly changing as means of transportation and industries vary, and as centers of population and culture shift in the course of time.

Examples of the changed value of vicinal location, such as that of the British Isles in Roman as compared with modern times, have repeatedly been pointed out. A clear example, on a smaller scale, of such a change has been observed in the Catskill Mountains of New York State. The change has affected a considerable portion of the mountain region, but for the sake of definiteness, conditions in only a limited area, namely that of the Hobart Quadrangle at the head of Delaware River, are here described.

The topography of the Hobart Quadrangle is that of a plateau dissected by streams to a stage of late maturity, with a relief of a thousand to fifteen hundred feet. The valleys near the streams are broad and their flood plains and lower slopes are suitable for farming. The higher slopes are too steep for successful cultivation, but are suitable for pasture and forest. The valley bottoms and lower slopes are mainly cleared and cultivated, the lower steeper slopes are in pasture, and the upper slopes and mountain tops are forested. The region is admirably adapted to the dairying industry which is, and from the time of the earliest settlements has always been, the dominant form of agriculture. The plentiful rainfall of the mountains, the compact glacial till which floors the valleys, and the numerous springs which issue from the porous sandstone rocks combine to favor the growth of grass, making most excellent pasture and meadow land.

* Semple, E. C., *Influences of Geographic Environment*, pp. 132-137.

The center of the quadrangle is about eighty miles distant by rail from Kingston on Hudson River, and about one hundred and eighty miles from New York City. By road the distance to Catskill, the nearest point on Hudson River, is fifty-five miles.

Before the building of the railroad in the decades from 1870 to 1890, the principal outlet for the region was overland to Catskill. Then, as now, the prevailing industry was dairying and the marketable product was butter. The dairymen were, of necessity, dependent on local resources of hay and grain for cattle feed. The greatest milk production was sought during the summer when the fresh pastures were available and the milk could be produced at the lowest cost. In the winter, the cows were allowed to go dry and little butter was made. Under those conditions the cattle required the minimum of feed and care and the hay gathered on the farms during the summer, supplemented by a small amount of home-grown grain, sufficed to keep them through the winter. In the late autumn, the farmers drew their summer's butter overland to Catskill, bringing back the groceries necessary for the winter. The trip required about one week. Another trip was sometimes made in the spring.

Under this regime the farmers of the region were prosperous and there were many fine, well-kept farms. Since the topography is such that much of the best farming lands lies near the heads of the larger valleys, many of the most profitable farms were located in such situations. Throughout the region the dominant factor, aside from personal ability, controlling the success of farming, was the character of the soil and the ease of cultivation. Since the distance to market was about the same from all parts of the quadrangle, or rather, since with only one or two trips per year a slightly greater distance from market was not a serious drawback, there was little advantage in any particular location as compared to another provided the soil and topography were equally favorable. The value of vicinal location for the region was essentially *undifferentiated*. One location was nearly, or quite, as favorable as another.

During the years from 1870 to 1894 the railroad was built across the eastern and central parts of the quadrangle along the valleys of the East and West Branches of Delaware River. With the advent of the railroad, the overland haul to Catskill was given up and a market was opened for milk as well as for butter. The demand on the part of New York and adjacent large cities was great and there was a change, hastened by the constantly increasing scarcity of labor, from the production of summer butter to that of winter milk. The change in season was

caused by the insistent demand for milk in winter as well as in summer, and by the higher prices which were paid for winter milk.

The production of milk, particularly of winter milk, immediately made the dairymen strictly dependent upon the railroad as an outlet for their product and as a means of importing the large quantities of cattle feed, especially grain, needed for the production of the winter milk. Thus, for two vital necessities, the dairymen became closely dependent upon the railroad.

Moreover, milk to be shipped to New York must be delivered at the railroad every morning. This immediately placed all farms which happened to be situated far from the railroad at a great disadvantage, since the farmer with his team must either spend a considerable part of his day in hauling his milk to the railroad, or he must pay a cash sum of from two to ten or more cents per forty-quart can to hire it hauled. As a result of this, though the total prosperity of the region may have been increased, the farms situated at a distance from the railroad, even though they possessed excellent soil and favorable topography, began to decline in value, while those nearer to the railroad increased, even where soil conditions were less favorable.

How great, under the changed conditions, is the advantage enjoyed by the farmer living near the railroad can best be illustrated by a rough calculation.

Suppose two farms, equally good in all other respects, are situated, the one one-half mile from the railroad, the other five and one-half miles distant. Under the old system, by which the product was hauled once each year to Catskill, the more distant farmer was compelled to travel on the one or two round trips with his product at most only ten miles per trip farther than the other. This slight difference, coming as it did in the fall when other work was slack, was negligible. Under the present conditions, however, both farmers make the daily trip to the railroad with their milk. The one travels eleven miles, the other one mile. The more distant farmer is compelled to travel in the course of a year 3650 miles farther than the other. Assuming that the services of a man and team are worth \$5.00 per day and that the round trip requires, on the average, one half day, the more distant farmer, delivering a full load—about one ton or 23 cans—of milk each day, is taxed \$912.50 per year for his unfavorable location. Assuming that he produces only a partial load of milk per day, his tax will be less than this figure, but more than half, since the trip must be made; the time required to make the trip is nearly the same, and the wear and tear on horses and wagon is not reduced by half. If this farmer chooses,

rather, to pay ten cents per can, the prevailing price for such a distance, to have his milk hauled to market and produces a ton, or 23 cans, of milk per day, his tax is about the same \$839.50. Few individual farmers produce as much as this, but 10 cans is not an uncommon amount. For this amount the tax would be \$365.00 per year, most of which would be clear profit for the farmer located near the railroad.

The result of the changed conditions has been to put a high economic premium upon location near the railroad. A marked concentration of the prosperity of the region has taken place.

Whereas, formerly, there were many profitable farms scattered over the quadrangle wherever soil and topographic conditions were favorable, they are now confined mainly to sections within moderate distances of the railroad, while farms farther away are declining in value in spite of the fact that not uncommonly they have better soil and topography. The fine old farm houses on these more distant farms, built before the advent of the railroad and now in very many instances sadly run down and neglected, bear mute witness to the change.

There can be no doubt that the present state of affairs is, in part, the result of a mal-adjustment to the new conditions brought about by the building of the railroad, and could be remedied, in some degree at least, by suitable adjustments. If, for instance, agriculture on the more distant farms were to be conducted on some other than a milk basis, the disadvantage of the present situation might be largely overcome, or if skimming stations or small creameries were to be established at favorable points too far from the railroad for profitable hauling, it is possible that the more concentrated products—cream and butter—might be hauled to the railroad without serious economic disadvantage. The cost of installation, upkeep, and labor would, however, counteract in some degree the advantages thus gained. In sections of the quadrangle most distant from the railroad a few such skimming stations have been established, but they are not numerous enough, and probably could not economically be numerous enough to counteract entirely the disadvantages of unfavorable location with raw milk production as the dominant industry on all farms, whether favorably or unfavorably located.

In certain valleys most distant from the railroad, e. g., the head of the Little Delaware, the change above described has not occurred. The farmers still confine their attention principally to butter making and to the raising of cattle and hogs, though local skimming stations have partly supplemented the home buttermaking. It is notable that these valleys still exemplify the old-time undifferentiated prosperity. The success of agri-

culture there is still controlled mainly by the physiographic factors—soil and topography. Many of the most prosperous farmers are located farthest from the railroad near the heads of the valleys where the broad, open, late mature valley-forms are best developed.

The Catskill Mountain region furnishes a clear illustration of a change in the value of the geographic factor of vicinal location from the earlier state, under which the value was *undifferentiated* and was essentially the same for all parts of a considerable area, to the present condition of sharp *differentiation* within the larger area. The differentiation was evidently brought about, primarily, by a change in the means of transportation which caused readjustments of the prevailing industry. Similar readjustments should be expected everywhere to have followed the building of railroads or any other revolutionary changes in the means of transportation. It is worthy of note that the introduction of the automobile, with its accompanying improvement in country roads, must inevitably tend, in some degree, to break up the sharp differentiation now prevailing, though it can scarcely reestablish the former conditions.

DULUTH, A PRODUCT OF THE WATERWAYS

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UPON the slopes of a long range of hills rising out of the deeps of a great lake, there lies a city full of the spirit of youth that awaits with a glad welcome the approach of every mariner. It faces the rising sun and is inspired each morning by the rays which dance and play upon the bosom of Lake Superior.

The inspiration of the wholesome sparkling waters of the world's largest fresh water lake is doubly emphasized by the resources which lie at Duluth's back door, for they rank among the "Unlimited." Their development during the past quarter of a century has been a factor of the Great Lakes. Had it not been for the Great Lakes, the grain and lumber of the Northwest would not have reached the markets for many years. Similar products from areas located much closer to the eastern market would have taken precedence, for by rail the nearer the market the less the freight charges. The water highway carries the freight for a mere fraction of the cost by rail. For example, the cost of carrying a bushel of grain averages in round numbers 2 cents from Duluth to Buffalo via water; via rail the same bushel