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AUTHOR Norris, Stephen P.; And Others
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ABSTRACT

To account for the fact that the average reading literacy in Newfoundland and Labrador (Canada) is lower than the national average, a study examined the value that individuals place on literacy. Subjects, 625 males and females, each of whom was a head or one of the heads of households between 21 and 65 years of age and had not participated in an earlier study identifying the discrepancy, were administered a 59-item questionnaire and a literacy skills measure (the Survey of Literacy Skills Used in Daily Activities). Results indicated that: (1) demographic factors influenced in a variety of ways the value that individuals placed on literacy; (2) the value placed on literacy (such that it motivated subjects to action--to want more education, to be dissatisfied with the educational system in their community) was related to increased literacy levels; (3) literacy attainment did not lead to perception of a higher quality of life and to greater participation in the labor force; and (4) literacy attainment led to greater participation in literacy activities, but hardly more than some other factors like age and community of residence. Findings suggest that literacy develops better when it is valued, but not just any kind of valuing will do. (Three tables of data and a figure representing a model of literacy attainment, outcomes, and activities are included.) (RS)

The Effects of Demography and Values on Literacy Attainment; and the Effects of Literacy Attainment on Literacy Practices, Economic Benefits, and Perceptions of Quality of Life

Stephen P. Norris
Linda M. Phillips
Robert K. Crocker

Report Number 2

Summary Reports of
Paths to Literacy and Illiteracy in
Newfoundland and Labrador

Linda M. Phillips and Stephen P. Norris (editors)

Memorial University of Newfoundland
St. John's, Newfoundland

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PURPOSE

Using data collected by Statistics Canada in 1989 on behalf of the National Literacy Secretariat, Norris, Phillips, and Bulcock (1992) found that when the effects on literacy of a number of demographic factors are removed, the average reading literacy in Newfoundland and Labrador is lower than the national average, and lower than every province except Prince Edward Island. The purpose of this study was to examine the potential of accounting for this unexplained discrepancy.

The anthropologist John Ogbu (1988) has hypothesized that a proportion of the school performance of minority children can be explained by the value they place on schooling. Those individuals who believe that schooling leads to a good life can be expected to perform better. The same relationships could occur for literacy: those who value literacy because they see it as leading to a better life might acquire more literacy. Maybe, in Newfoundland and Labrador, people judge literacy to be less valuable than it is judged by people in the rest of the country. If so, this difference could account for the differences in literacy between Newfoundland and Labrador and the rest of Canada that are as yet unexplained.

In this study, we looked only at individuals who were living in Newfoundland and Labrador. Therefore, we are not able to determine whether the explanation proposed above about the differences between Canadian and Newfoundland and Labrador levels of literacy is correct. Instead, we tried to answer the following questions relevant to exploring Ogbu's idea:

1. Do demographic factors influence the value that individuals place on literacy?
2. Does the value that individuals place on literacy affect their literacy attainment?
3. Does literacy attainment lead to perception of a higher quality of life and to greater participation in the labour force?
4. Does literacy attainment lead to greater participation in literacy activities?

Questions 2 and 3 in particular, are crucial indicators of the viability of Ogbu's hypothesis. If the value individuals place on literacy is unrelated to their literacy attainment, if individuals' literacy attainment is not related to how well they perceive their lives to be and to what affects the quality of their lives, then Ogbu's hypothesis is called into question. If, on the other hand, the relationships exist, then it would be worth exploring the hypothesis on a wider, national level.

METHOD

Sample

The sample was chosen using a three-stage procedure that first selected communities, then households within communities, and then individuals within households.

Community Level

Fourteen communities were selected from Newfoundland and Labrador. They represent different regions, economies, and populations. Using Statistics Canada data (1986a, Table 3, pp. 3-1 to 3-8; 1986b, Table 2, pp. 2-1 to 2-17), all communities in Newfoundland and Labrador were ranked by population, and, starting with the largest, divided into five groups as shown in Table 1.

Table 1

Community Groupings and Their Combined Populations

Community Size	Number in Group	Combined Population
≥25,000	1	122,763
≥5,000; <25,000	11	104,927
≥2,000; <5,000	31	96,147
≥600; <2,000	117	110,906
≤599	533	133,555

The entire population of the first group was chosen as one sampling base. This is because the capital city area, which comprises this group, is unique to the province and must be represented in any study that purports to give a valid picture of the province. Further communities were selected from the remaining four groups to represent each of the following types:

small, isolated, and traditional resource based;
large, isolated, and traditional resource based;
small, traditional resource based;
large, traditional resource based;
small, industrial, or nontraditional resource based;
large, industrial, or nontraditional resource based;

Traditional resource-based communities are those that grew out of the coastal fishery; nontraditional resource-based communities include those that grew around mines, and shipping associated with industries. Three communities were selected from each of the second, third, and fourth groups, and four from the fifth group.

Household Level

A sample of 125 households was allotted to each of the five groups of communities for a total sample of 625 households. The household sample size for a given community was calculated as the proportion of 125 equal to the proportion of that community's size relative to the total population in its group. The resulting calculations were rounded to the nearest five.

Households within communities were selected by residential telephone numbers from local directories. A formula for selecting numbers was customized for each community. First, an estimate was taken of the total number of telephone numbers. This number was divided by the community's household sample size to produce an increment. Beginning with the first number in the community's telephone directory, interviewers chose the telephone numbers reached by counting the incremental amount from the last number. In cases where the number reached was not a residential number, the next residential number was chosen and the next increment counted from that number. In the two largest communities, the counting increment was changed to a number of columns in the directory. The last residential number in every column reached using the increment was chosen. Interviewers cycled through the directory as many times as required to reach their quotas of completed questionnaires.

Individual Level

Individuals within households were selected so as to ensure equal numbers of males and females in the entire sample. Interviewers asked in alternate interviews for males and females who also met each of the following criteria: (a) head or one of the heads of household; (b) between 21 and 65 years of age, inclusive; and (c) had not participated in the 1989 Statistics Canada Survey of Literacy Skills Used in Daily Activities.

Instrumentation

Two instruments were used: (a) a questionnaire developed especially for the study, and (b) a literacy skills measure selected from a set of possible candidates.

The Questionnaire

The questionnaire was used to collect data on the following: (a) individual's age, birthplace, and language; (b) educational history, levels, and plans; (c) work history, workplace literacy requirements, and plans; (d) literacy use at home; (e) children's age, education, and occupations (if appropriate); (f) activities conducted with and plans for children still in school; (g) educational philosophy; and (h) perceptions of quality of life in Newfoundland and Labrador.

The questionnaire has 59 items, which are grouped into seven sections as described in Table 2. Many items contain thematically related sub-items. The questionnaire employs a branching structure, so that no individual is required to answer all items. A respondent who finished the questionnaire would answer between 75 and 100 questions, and spend from 30 to 45 minutes.

Table 2

Numbers of Items in Each Section of the Paths to Literacy and Illiteracy in Newfoundland and Labrador Questionnaire

Section	Types of information collected	Number of Items
1	Personal/demographic	4
2	Educational history and aspirations	4
3	Work history, aspirations, and type of literacy and numeracy skills required by current or previous employment	18
4	Use of literacy and numeracy skills around the home	3
5	Educational and employment profile of children, spouse, and parents; educational aspirations for children and role of home in education	14
6	Perceived relationship between formal education, literacy, numeracy, and employment success	7
7	Conceptions of the quality of life in Newfoundland and Labrador; conceptions of the employment opportunity structure in Newfoundland and Labrador, its relationship to formal education, and its effects on mobility; perceived quality of local education	9

The questionnaire has five types of items. The first type asks for either a "yes" or "no" response. The second type looks for short answers to requests for such things as age, place of birth, and highest level of education attained. The third type asks how frequently respondents engage in certain characteristically literate practices listed for the respondents by the interviewers. The fourth type asks a question, and provides interviewers with a list of precoded responses, and with space to write other responses; the interviewers do not read the list aloud. The fifth type ask a question and provides space for the interviewer to record the verbatim (or as verbatim as possible) reply to the question.

Three categories of data were compiled from the questionnaire for deriving the results reported here: (a) demographic factors, (b) value placed on literacy, and (c) literacy outcomes and activities.

Demographic factors. Information on respondents' ages and education, the education of their parents, and their communities of residence were taken directly from the questionnaire.

Value placed on literacy. Eighteen items from the questionnaire were selected to represent the value respondents placed on literacy. The items referred to education rather than directly to literacy. However, we assumed that for most individuals education would serve as near-enough an equivalent to literacy and would be comprehended more easily. The responses to the items were coded such that higher scores were hypothesized to indicate a greater value of literacy. The following is a sample of the items which were used, and the responses taken to indicate a higher value of literacy:

Do you hope to get more education in the next few years? ("Yes" response)

How much education do you encourage your children to get? (any response greater than high school)

Do you help your children with homework? ("Yes response)

What kinds of things do you do with your children? (Literacy-related responses)

Do you think a high school education is enough? ("No" response)

What is important for getting a good job? ("Education" response)

Are you happy with the quality of schooling in your area? ("No" response)

Should parents have a greater say in schooling? ("Yes" response)

In an analysis of these 18 items that will not be reported here, 10 items were selected as suitable measures of the value placed on literacy. These items were judged by a series of theoretical and statistical considerations to fall into two groups. The first group represented what we called "action-related value" of literacy, and the second "career-related value". In the first group, individuals expressed a desire to take control over their education and to continue to advance it. In the second group, individuals expressed an awareness of the importance of education to successful work. The statements representing each of these groups are displayed in Table 3.

Table 3

Items Representing Value Place on Literacy

Action-related Value	Career-related Value
Parents should have more say in what goes on in schools	The most educated get the top jobs in Newfoundland and Labrador
I am not satisfied with the quality of schooling in my area	One's education is most important for getting a good job
One can't have a good life in Newfoundland and Labrador without a high school diploma	One can't get too much education
I hope to get more education in the next few years	A high school diploma is not enough to build a good career
Education must continue even past one's mid-20's	
Education is no more important for those who live in cities and large towns	

Literacy Outcomes and Activities. For the results reported here, only two literacy outcomes were considered: (a) workforce participation, and (b) perception of having a good life in Newfoundland and Labrador.

Literacy activities were determined using three lists of activities: (a) a 15-item list of reading activities, (b) a 7-item list of writing activities, and (c) a 9-item list of activities involving the use of numbers. Respondents were asked whether they engaged in each activity often, sometimes, hardly ever, or never.

Literacy Tests

The choice of a literacy test was preceded by an extensive review of existing English language literacy tests. Preliminary work included a thorough search of major listings of tests. Provincial agencies that offer literacy assessment services were asked about test usage and preference.

We preferred a test that was standardized, widely used, reliably able to identify broad gradations of adult literacy, and easy to administer. Few of the tests identified were standardized and fewer were used widely. The most frequently used standardized tests of literacy are the Test of Adult Basic Education (TABE, 1987) and the Canadian Adult Achievement Test (CAAT, 1988).

Test of Adult Basic Education. The TABE is designed as a placement test for individuals wishing to enter programs in adult basic education, adult upgrading, and adult continuing education. It is used in Canada and the United States as a benchmark test. It covers an estimated grade range of 2.6 to 12.9, and is standardized on a sample of 8125 children. A 25 item, vocabulary-based locator test is used to identify which of four levels is the most appropriate to administer to a given individual. Since it includes four academic areas -- reading, mathematics, language, and spelling -- the full battery can be lengthy; it can take up to 4.6 hours to administer. Furthermore, while developed for adults, the items on the TABE are school-like and hence child-like, and the test is based on making comparisons to grades attended by children.

Canadian Adult Achievement Test. The CAAT is designed to measure education levels among adults. It is the Canadian version of an American test, the Adult Basic Learning Examination (Karlson & Gardner, 1986), which itself is based on the Stanford Achievement Test. Unlike the TABE, the CAAT was designed to be appropriate for adults. A 45 item placement test is used to determine the appropriate test level to administer: (a) 1-4 years of schooling (primary), (b) 5-8 years of schooling (intermediate), and (c) at least 8 years of schooling.

Survey of Literacy Skills Used in Daily Activities. The SLSUDA (Statistics Canada, 1989a) contains 36 items in two parts. The first part contains seven items and is intended as a screening questionnaire. Items in this part require skill levels ranging from the ability to sign one's name on a social insurance card to the ability to read a 200 word passage and to answer two multiple-choice questions about it. Individuals unable to complete correctly at least three of these items are not asked to attempt the second part.

Items on the second part range in difficulty from matching words on a shopping list with words on a supermarket sale flyer, to writing a letter returning for repair a broken hand mixer, reading a 400 word essay and making inferences from it. Prior to starting the survey, the interviewer reads to the respondent the following:

> This section of the survey contains several tasks for you to complete. You may find some tasks easy and some more difficult. It's all right if you can't do all of them, but it's important that you try each one. I will read instructions to you for each task. Some of the tasks will require you to read short passages, therefore, if you normally wear glasses, you will need them to complete the survey.

No assistance beyond repeating the instructions for individual items is provided.

Interviewers record and score responses for the first part as respondents give them. Immediate scoring is necessary, because doing the second part depends upon performance on the first. An observation checklist for the second part requires the interviewer to record either that the respondent (a) completed the task, (b) verbalized that he or she could not do the task, or (c) refused to do or simply did not do the task, but did not verbalize that he or she was unable to do it.

While SLSUDA has 36 items, for scoring purposes some items are subdivided. The total number of scorable items is 44, of which 35 are used to determine reading level, 2 are used to determine writing level, and 7 to determine numeracy level.

Evaluation of the Literacy Measures. The Survey of Literacy Skills Used in Daily Activities was selected for use in this study. The SLSUDA was preferred over the TABE and CAAT for several reasons. First, it is designed not as a placement test but as a direct measure of literacy attainment. Second, it requires no specialized training to administer. This was important for this study, because individuals hired to administer the instrument lacked professional training in reading assessment. Third, because it had already been administered to a sample of 600 adults from Newfoundland and Labrador, the opportunity existed to compare our results to this original sample. Fourth, the instrument was designed with content appropriate for Canadian adults.

Procedure

Interviewer Selection

Seventeen interviewers were hired. Each resided in the community where they would collect data. Three interviewers were used for St. John's, and two for Corner Brook. One interviewer was used for each of the other 12 communities. Interviewer sample sizes ranged from 20 to 50 respondents.

In selecting interviewers, preference was given to mature individuals who were known and respected in their communities. Names of potential interviewers were given by such people as community college administrators, school district administrators, and school principals. Ten of the 17 interviewers were educators -- often retired school principals and teachers, and substitute teachers. Two interviewers were school secretaries. Fifteen interviewers had at least some university education. Their ages ranged from 30 to 58 years, with an average age of 46.

Interviewer Training

Interviewers were brought to Memorial University of Newfoundland's St. John's campus for a day of orientation and training prior to data collection. The objectives of the training workshop were as follows:

(a) to explain the origins and purpose of the research project;
(b) to explain interviewers' duties and responsibilities, and to explain the pertinent ethical guidelines for conducting research on human subjects;
(c) to give instruction on contacting respondents, providing appropriate answers to anticipated respondent questions, organizing and using time, keeping records, and using the survey instruments and associated documentation; and
(d) to provide practice in the use of both survey instruments.

Interviewers were given an administration booklet for the Survey of Literacy Skills Used in Daily Activities that was adapted from a Statistics Canada (1989b) administration booklet; an interviewer's manual for the Paths to Literacy and Illiteracy in Newfoundland and Labrador Questionnaire and the Survey of Literacy Skills Used in Daily Activities; and telephone introduction sheets and data progress sheets that served as organizational tools for interviewers, and provided information on refusal patterns.

Interviewing and Testing

The estimated time required to complete the questionnaire and the literary skills survey was between one and four hours. Because interviewing and testing could take so long, two meetings were arranged with respondents in their homes. During the first meeting, the questionnaire and the screen test of the SLSUDA were administered. A second session for administering the main part of the SLSUDA instrument was arranged when respondents got at least three items correct on the screening test. Otherwise, respondents were told that all the necessary information had been gathered. While it was strongly discouraged, some interviewers administered the questionnaire and the complete literacy survey in one session.

Interviewing and testing was completed in the majority of communities within eight weeks. The full quota of respondents was not reached in St. John's. Data collection in St. John's was halted during the fourth month.

Coding and Scoring

Three senior undergraduate students were hired to score and code the instruments and to perform data input. At an introductory meeting, the students were instructed in the proper coding of the questionnaire. Where available, the codes on the questionnaire were used. Codes for the open-response items were established on the basis of four questionnaires selected randomly from each of five communities reflecting a broad regional representation. The responses to all the open-response items on these 20 questionnaires were transcribed. The most frequent responses for each question were synthesized into a set of short statements, each of which was assigned a code. A separate code was provided for "other" responses. These initial codes were used to begin coding the remaining questionnaires. Coders noted any responses that occurred frequently, but that did not have their own codes. When a sufficient number of such responses were found, a new code for that response was added to the given item, and previously coded questionnaires were recoded, if necessary, in light of the modification.

At a second training session, the students were assigned a scoring rehearsal task. The scoring guide for SLSUDA was adapted from Statistics Canada (1989d). Scoring instructions were used unchanged. Ten completed SLSUDA booklets were selected randomly (one from each of ten communities), and each student was given copies. Students were instructed to score all 10 tests using the SLSUDA scoring guide.

At a third meeting, scoring discrepancies across students were identified and discussed. In each case where one student scored an item differently from the other two, the item was analyzed and the appropriate scoring identified.

Each student was assigned to score a different one-third of the SLSUDA booklets for each of the fourteen communities. In addition, in order to estimate inter-rater reliability a randomly selected sample consisting of 20% of the total sample was scored by all three assistants.

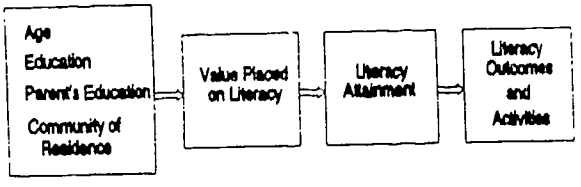
Model Examined

The model of literacy examined is pictured in Figure 1. The model depicts a path of causation that flows from left to right. Demographic factors are listed in the box to the left. In the model, these are assumed to influence the value placed on literacy, which is represented by the second box. The third box represents literacy attainment. Literacy attainment is assumed to be influenced both by the demographic factors and by the value placed on literacy. In the box to the right are outcomes of literacy attainment.

As we move from left to right in testing the model, the effects of the demographic factors are taken into account before subsequent effects are estimated. Thus, before the effects on literacy attainment of the value placed on literacy are computed, the effects on literacy attainment of the demographic factors are removed. The effect of the value placed on literacy is calculated on the remaining differences in literacy attainment scores.

FIGURE 1

A Model for Literacy Attainment, Outcomes, and Activities



RESULTS

Effects on Value Placed on Literacy

As discussed previously, there were two indicators of the value individuals placed on literacy, action-related value and career-related value.

The results show that age, education, and community of residence affect the value placed on literacy in a variety of ways. First, there is a tendency for the youngest age groups (below 40 years old) to place more value on literacy than the older groups. In the case of those less than 30 years old, they tend to place more action-related value only.

Second, higher educated individuals place more action-related value on literacy, but the amount of career-related value placed on literacy does not differ for individuals with different educational levels.

Third, community of residence affects both the action-related and career-related value placed on literacy. Individuals from eight communities placed less action-related value on literacy than individuals from St. John's, who were used as the basis of comparison. Individuals from eight communities placed more career-related value on literacy than individuals from St. John's. There was an overlap of four communities in these comparisons, so that four communities placed both less action-related value on literacy than St. John's and more career-related value.

Effects on Literacy Attainment

The strongest effects on literacy attainment were age and education. Younger and more educated individuals tended to have higher reading literacy, and more educated individuals also tended to have higher writing literacy and numeracy.

Fathers' education had a positive effect on reading literacy and numeracy, but mothers' education had no effect over and above the effect of fathers' education on any aspect of literacy.

When the individuals' educational attainment is not considered in the calculations, the education of their mothers has a significant effect on both their reading and writing literacy, while the effect of their father's education on reading literacy and numeracy increases somewhat. The implication is that mothers' education contributes more than the fathers' to the literacy of the individuals surveyed.

Five communities had higher reading literacy than St. John's, and one had less. There were few differences among communities on writing literacy and numeracy. When the effects of education on literacy attainment were not considered in the calculations, five communities had lower reading literacy than St. John's, and only one had higher reading literacy. This suggests that much of the differences in literacy attainment between communities in the province is due to differences in educational attainment.

Action-related value placed on literacy had a positive effect on writing literacy, and no effect on the other aspects of literacy. Career-related value placed on literacy had a negative effect on reading literacy, but no effect on the other aspects of literacy. When the effects of education on literacy attainment were not considered in the calculations, then action-related value had a positive effect on both reading and writing literacy, and career-related value had a negative effect on reading literacy as before.

Effects on Literacy Outcomes

Labour force. Each younger age group was represented in the labour force more than the oldest group. This is to be expected, since many older individuals would be retired.

More educated individuals have a greater tendency to be in the labour force than less educated, but literacy attainment has only a slight influence. Only writing literacy affects presence in the labour force, and then weakly negatively. When educational attainment is not considered, the effect of age on presence in the labour force increases, and there is no effect of literacy attainment.

Good life. More educated individuals tend to more often think that they lead a good life in Newfoundland and Labrador, and the youngest age group (less than 30 years old) that they do not. Literacy attainment has no effect on the perception of the good life, whether or not educational attainment is considered in the equation.

Effects on Literacy Activities

All of the younger age groups engaged more often in all three forms of literacy activities than the oldest group (greater than 60 years old).

More educated individuals also engaged in more literacy activities of all sorts. Mothers' education positively affected reading and writing activities, but when the educational attainment of the individuals was not considered, then mothers' education positively affected all three sorts of activities.

Community of residence had considerable effect on writing activities, with nine communities engaging in more writing activities than St. John's.

Only reading literacy attainment affected literary activities, with greater attainment leading to more activity of all three sorts.

DISCUSSION AND CONCLUSIONS

In the following, we discuss only the results that bear directly on the four questions raised at the beginning.

1. Do demographic factors influence the value that individuals place on literacy?

Yes, in a variety of ways. It is easy enough to explain the result that more educated individuals place more action-related value on literacy. It is this very value that helped them get their education.

Perhaps more important for literacy development in the long run is that younger individuals tend to place more action-related value on literacy. Since action-related value on literacy had a positive influence on literacy attainment, this find is encouraging.

On the other hand, eight communities placed less action-related value on literacy than St. John's. In five of these communities, their reading literacy scores were lower than that of St. John's. In all eight cases, the communities were small and isolated. The finding suggests that there is something about the culture of these communities that inhibits taking positive action towards affecting education, for example, by demanding that parents have more say. Since this tendency is also related to lower literacy levels, there appears to be room for a politicization of smaller communities regarding education. The career-related value of literacy which many of these same communities hold is, in fact, related to lower literacy levels.

2. Does the value that individuals place on literacy affect their literacy attainment?

As mentioned in the discussion of the first question, it does. However, the effect is subtle and, perhaps, surprising. If the value placed on literacy is such that it motivates individuals to action -- to want to get more education, to be dissatisfied with the educational system in their community, and to want to have more say in education -- then this is related to

increased literacy levels. If, on the other hand, the value placed on literacy is based on seeing literacy as a route to employment, then this is related to decreased literacy levels. These findings would seem to have profound implications for many current government policies regarding the promotion of literacy.

3. Does literacy attainment lead to perception of a higher quality of life and to greater participation in the labour force?

Perhaps surprisingly, no. If education is the factor, then the answer is positive for both outcomes. But for literacy, the answers are negative. Again, these findings have fairly serious implications for government literacy policy. Literacy is being advocated largely because of the beneficial outcomes that accrue from it. But these outcomes seem not related directly to literacy.

4. Does literary attainment lead to greater participation in literacy activities?

It does, but hardly more than some other factors like age and community of residence. This finding suggests that literacy activities result largely from situations that demand them. The clearest example is the nine communities that engaged in more writing activities than St. John's. Presumably, the reason for this is that writing is just needed more in these communities, perhaps because of their greater isolation.

This study confirms some and disconfirms other widely held views about literacy. It confirms the view that literacy develops better when it is valued. But not just any kind of valuing will do. If the value seen in literacy is its role in gaining employment, this in fact detracts from literacy. It confirms the view that literacy is related to politicization. Those that take action to increase their literacy will have it increased. However, greater literacy does not seem to lead to a perception of a higher quality of life, an outcome that is often touted by its advocates. It seems policies would be more effective if they promoted literacy for its own sake.

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