ON REVISING PRESTIGE SCORES FOR ALL OCCUPATIONS

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ABSTRACT

Prestige scores for all occupations developed from the national surveys in the 1960's have been widely used by researchers in the social sciences. The change in the 1980 Census classification of occupations necessitates updating the prestige scale accordingly. New scores can be obtained either by reworking the old scores or by collecting new data. In this paper, we argue for the latter choice based on the methodological, substantive, and theoretical considerations. The plan to collect occupational assessments from a nationally representative sample of 1500 Americans in the 1989 NORC General Social Survey will also be outlined.

ON REVISING PRESTIGE SCORES FOR ALL OCCUPATIONS

In the 1960's, a series of national surveys led to the development of prestige scores for all occupations. These scores and other scores based upon them (e.g., the socioeconomic index and the international prestige scale) have been widely used whenever research called for a common metric for occupations. Unfortunately, the 1980 Census of population ushered in a new system of occupational classification which did not mesh readily with existing prestige scales. New scores can be obtained either by reworking old scores or by collecting new data. In this paper, we consider the methodological, substantive, and

theoretical considerations that inform this choice. In so doing, we challenge the conventional wisdoms that the prestige of occupations is invariant and that socioeconomic status-measures are necessarily superior to prestige scores. We briefly outline the plan to collect occupational assessments from a nationally representative sample of 1500 Americans in the 1989 NORC General Social Survey.

Background and Previous Inquiries

The last major inquiry into the prestige hierarchy of occupations in the United States was Conducted in the 1960s by a research team at the National Opinion Research Center. Probably the most notable accomplishment of this research team was the construction for the first time of a set of matching prestige scores for all detailed occupations identified in the coding scheme employed in the 1960 Census of Population. These scores were derived from a series of national sample surveys conducted in 1963, 1964, and 1965, which were merged together via the evaluation of a subset of occupations common to all the three studies. The resulting prestige scores for all occupations were reported and evaluated by Siegel (1971) and have been widely used by the social science community. For example, they continue to be employed, after some slight modification to fit the detailed occupational code employed in the 1970 Census of Population, to assign prestige scores to detailed occupational information collected in NORC's General Social Survey.

At present, the Siegel/NORC prestige scale for all occupations is over two decades out of date. Below we explain why 1) some recalibration of scores is essential, 2) some change in prestige accorded occupations is likely, 3) prestige is useful apart from its association with socioeconomic status, and 4) there are compelling methodological reasons for collecting new data rather than reworking old data.

The scores collected in the inquiries directed by the NORC research team in the 1960s remain virtually unique in several respects. First, at the present writing there is only one other country--Israel--for which there exists a set of prestige scores of all occupations identified in a detailed and well documented scheme for coding occupational information (Kraus, Schild, and Hodge, 1989; Kraus, 1976). Second, the prestige ratings derived in the 1960s for occupations in the United States comprise the backbone of Treiman's International Prestige Scale (IPS), merging prestige data from numerous countries to create a single prestige scale which can be employed within any country. The IPS has proven quite useful in comparative research where scoring occupations on a common metric must be achieved before comparisons can be considered at all (see Treiman, 1977; for use of the IPS together with local prestige and socioeconomic status scales of occupations, see Hodge, Treiman, Kraus, Chen, and Tominaga, 1983). Although an alternative approach to measuring occupational status that also yields a comprehensive system of scoring has been developed in Great Britain (Goldthorpe and Hope, 1974) and applied in Italy in modified form (de Lillo and

Schizzerotto, 1985), the methods employed in the U.S. studies remain the primary standard against which all other inquiries are evaluated.

On the Need for Recalibration of Prestige Scores

The prestige scores developed by Siegel were explicitly designed to cover the detailed occupational codes used in the 1960 Census of Population. The occupational titles contained in these studies were, however, sufficiently numerous to enable recalibration of the prestige scores to fit the detailed occupational code later employed in the 1970 Census of Population with only minimal slippage in the quality of matches. This was possible for two reasons. First, although changes in the census code were more extensive between 1960 and 1970 than between 1950 and 1960, many of the changes represented only modest shifts of particular jobs from one occupational category to another or simple splits of an earlier occupational code into new categories which could be combined to recreate the categories of earlier code. Second, the number of occupational titles whose prestige was ascertained from the studies of the 1960s (over 400) made it possible to map the prestige scores into the 1970 occupational code about as well as they could be mapped into the 1960 occupational code.

Without reworking and recalibration of the extant prestige data, it would be impossible for research workers to assign prestige scores to occupational data coded according to the 1980 occupational classification. There is scant question that this would involve the loss of numerous approximate, if less than exact, comparisons of the changing impact of occupations and their prestige or hierarchical position upon numerous facets of social behavior. Thus, we simply take for granted the desirability and usefulness of constructing some scale of the social position of occupations to match the detailed occupational classification in the 1980 Census of Population (which is likely to be employed in successive censuses with relatively minor modifications). Any calibration of the social location of occupations identified in the detailed occupational code for 1980 which is theoretically and methodologically consistent in, principle, if not in operational detail, with previous schemes of occupational evaluation is superior to a totally new approach which would invalidate comparisons with previous research.

Stability and Change in Occupational Prestige

The two main ways of recelebrating prestige scores are the collection of an entirely new data set and the reworking of older data. The choice between these two methods hinges, however, primarily upon the relative rate of change in the prestige gradings of occupations. There is surely not much point in collecting new prestige data unless there is some prospect that the new data will improve upon a recalibration devised from reworking older materials. Without the prospect of change in the prestige order of occupations, new data collection would be an unnecessary luxury in view of (a) the extensive occupational

coverage achieved in earlier inquiries and (b) the substantial evidence that occupational prestige scores are relatively independent of stimulus questions and rating methods (seep e.g., Siegel, 1971).

Despite the very high .99 overall correlation which was found between the 1947 North-Hatt study and its replication in 1963, there was evidence of systematic change in the prestige gradings observed in these two studies. Hodge, Siegel, and Rossi (1964) noted a number of modest changes in the prestige gradings of occupations. Particularly noteworthy among these changes were the general upswing in the prestige of scientific occupations and the older "free" professions such as physician and civil engineer and the overall downswing in the prestige of managerial and other white collar posts, as well as in such culture- and communication-based professions as "musician in a symphony orchestra" and "radio announcer." These changes are not simply random fluctuations, since Hodge, Siegel, and Rossi (1964, p.299) show that they are replicated in some measure among groups of raters differing in their educational level. Additional tabulations, not reported by the original investigators, reveal that the changes observed in different cohorts of raters are very similar to one another. Thus, the changes are not only systematic ones, but they also represent shifts in the evaluations of occupations within real cohorts, rather than changes brought about solely by the succession of generations.

While the changes appear to be both real and systematic, they are also very modest in magnitude. Changes of the order of magnitude revealed by the 1963 replicative study could have scant impact upon the overall prestige gradings of occupations. However, there are some important things to remember about the limitations and biases of the original North-Hatt study and its replication. First, the number of titles is quite limited (n 90). Second, the 90 titles in the North-Hatt inquiry are a biased subset of all occupations. Professional occupations comprise over one-third of all titles and service occupations are also overrepresented. Thus, the distribution of the titles in the North-Hatt inquiry lends itself to an overstatement of the stability in prestige gradings. A study more representative of the occupational order would have less built-in correlation of extremes between high status professions and low status service occupations.

Short of undertaking temporal comparisons of occupational prestige ratings which span the full range of occupations, there is no obvious way to obtain a solid handle on the extent, nature, and rate of changes in occupation prestige. A series of prestige studies conducted during 1963-65 provide evaluations of over 400 distinct occupational titles, which can be merged into a single common scale owing to the presence of representative subsets of matching titles which were included to enable the several studies to be merged into the metric of the basic 1964 survey. Although the titles available are biased in a variety of ways, they do provide an excellent benchmark with coverage of the full occupational range.

The extensive coverage of the occupational order by the studies of the 1960s guarantees, of course, that there will be greater opportunity for detecting systematic change. Duration (approximately a quarter of a century) is also sufficient for changes to have occurred and to have worked themselves out in the public opinion arena. There have been numerous significant changes in the occupational and industrial order since the last major prestige studies were launched. Among these changes, at least the following may well have affected occupational prestige ratings: 1) the growth and expansion of service occupations; 2) the demise of unionized industrial labor and its replacement by automated processes and/or imported goods; 3) the relocation of manufacturing away from the industrial heartland of the Midwest and Northeast to Southern centers where labor is relatively inexpensive; 4) the rapid expansion of information technology and the development of new computer uses in a variety of industries; 5) the rise of educational attainment in successive cohorts without a corresponding rise in occupational opportunities that require advanced education at the entry level; 6) the differentiation and subsequent evolution of novel specialties within established occupations, as new technologies become available; 7) the expansion of occupational opportunities for women, particularly in science and the professions, where women are now advancing to the highest levels, though still in small numbers relative to their participation in the labor force; and 8) efforts to professionalize relatively lower status occupations such as police officer, often by upgrading educational requirements for advancement, if not for entry.

Any occupation affected by these ongoing processes may well have its prestige grading transformed. Even occupations which are relatively insulated from these changes may well have their relative prestige affected by shifts in prestige of adjacent occupations in the occupational hierarchy., To be sure it would be foolish to expect that a new prestige inquiry will reveal massive overall changes in the prestige gradings of occupations. The prestige of janitors is not going to soar above that of physicians and the prestige of airline pilots is not going to drop beneath that of airline stewards or stewardesses. Some part of the prestige hierarchy of occupations, still to be determined, is immutable to change, because it is built into how certain occupations and their duties are linked to one another in specific work settings. For certain pairs of occupations to reverse their positions in the prestige order, it would be necessary for public knowledge of occupations and their work contents to deteriorate to a level that is incompatible with the educational level of the population. Thus, we expect to observe modest changes in only certain occupations.

Even modest changes can be of considerable substantive importance. In prestige studies conducted around the world, we also observe considerable cross-national agreement in the prestige scores of occupations (see, e.g., Hodge, Treiman, and Rossi, 1966; Treiman, 1977). There are, however, some very important differences that are obscured by the relatively high

gross correlations among the prestige hierarchies of nations. For example, we observe, as we move from country to country, that the relative standings of the most prestigious occupations such as religious officials, lawyers and judges, scientists, and party or high government officials may change. These shifts have little impact upon the overall similarity in the prestige ratings of any pair of countries, but they almost surely harbor very important differences between countries as to sources of authority and control. Continuing, albeit small, rises in the prestige of scientific occupations, as was observed between 1947 and 1963, can signal an increasing dominance of rational bases of authority at the expense of more traditional, religiously rooted sources of authority.

Prestige vs. SES Scores for All Occupations

The publication in 1961 of Duncan's Socioeconomic Index for All Occupations (Duncan, 1961) resolved the problem of assigning prestige scores to occupations which were not covered by extant prestige studies. Duncan achieved this feat by combining information on income and education available for all occupations in the 1950 detailed occupational classification to form an index of occupational SES. The weights of age standardized, summary measures of income and education were obtained by using there indicators to predict, over 45 matching titles, a prestige indicator derived from the 1947 NORC North-Hatt study. The resulting SES scores for all occupations enabled researchers to assign, unambiguously, a numerical score to any set of occupational data coded into the census scheme (see McTavish 1964).

Once Siegel's prestige scores for all occupations became available, it was inevitable that researchers would compare results obtained by coding occupational data according to prestige and according to SES. Although the two indicators are correlated on the order of .9, that still leaves about 20 percent of the variance in either measure that is uncommon with the other. This allows considerable room for the two measures to exhibit somewhat different properties in relation to other variables.

The results of exercises which compare prestige and SES scores are unambiguous, at least insofar as their predictive ability is concerned. The correlation between occupational SES of fathers and sons is sufficiently higher than the correlation between the prestige of their respective occupations, so that one can regard prestige as just an inferior indicator of whatever property of occupations is captured by Duncan's SES scale (Duncan, Featherman, and Duncan, 1972; Treas and Tyree, 1979; Featherman and Hauser, 1978). Unpublished results based on analyses of national sample surveys by one of the present authors also reveal that occupational SES is more closely connected with a variety of behavioral and attitudinal indicators including Rotter's I-E scale (a standard measure of powerlessness), indicators of orientation to achievement and desire for success, church attendance, voluntary organizational memberships, and the stated

extent of friendship ties.

In view of these results, some researchers, most notably Featherman and Hauser (1978), have regarded prestige as an epiphenomenon and suggested that it has no-useful role in the analysis of stratification processes. This view suggests one might well abandon the measurement of prestige altogether, and worry about updating SEI scores rather than prestige measures.

There are, however, a number of reasons why prestige should remain a central element of sociological studies, regardless of how much variance is associated with it. First, it is demonstrably wrong to regard occupational prestige as epiphenomenon. Hodge (1981) shows that the part of occupational ratings which are uncorrelated with occupational SES is itself shared by subgroups of raters varying extensively in their social location in contemporary society. Individuals and subgroups of them not only agree about the prestige an occupation bears, but also about how that prestige differs from the socioeconomic location of occupations. This implies that prestige is a Durkheimian phenomenon in the fullest sense of that phrase.

Second, even though prestige may perform poorly in stratification studies in the United States, there is some evidence that prestige, rat-her than SES, may be dominant in other societies. Israel is one of the few countries other than the U.S. for which both prestige and SES scales for detailed occupations are available. There, prestige rather than SES seems to govern the connectivity between father's and son's occupations and to play the more prominent role in attitudinal and behavioral consequences of occupational pursuits (see, e.g., Hodge, Treiman, Kraus, Chen, and Tominaga, 1983; also Kraus, 1976). Thus, one must entertain the possibility that the role of occupational prestige, as opposed to occupational SES, is a variable in the articulation of occupations between generations and with society.

Third, there remains a serious question as to whether or not empirical scales of occupational prestige adequately measure what prestige is conceptually purported to be. In the United States, where prestige scores were jerry-rigged from inquiries designed to explore other facets of prestige evaluations, occupational prestige has performed poorly relative to SES. In Israel, the reverse is the case, but the Israeli prestige inquiry was designed from its inception to provide prestige for the detailed occupational classification employed by the Israel's Central Bureau of Statistics. We have no way of knowing--short of doing it--that a prestige study for the United States designed from the ground up to provide prestige scores for all occupations would not outperform an occupational SES scale.

By far the most compelling reason for sustaining the tradition of prestige inquiries has little relevance to issues of measurement. Occupational evaluations are clearly part of the core value system of American society. Assessments of occupational prestige (a) are consistent from one subgroup to another, (b) are learned at a relatively early age, (c) are

relatively stable in the long run, and (d) are close to immutable in the short run. In a society like ours, where individualism and the work ethic are key elements in a system of beliefs which grades a person by his/her occupational success (see, e.g., Bobo, 1986), occupational prestige becomes a signal measure of merit. Changes in prestige and especially public assessments of emerging occupations become key elements in the evolving conception of what constitutes' success and the pinnacles of achievement to which new generations will be asked to aspire.

We have attempted to demonstrate two things in this section, (1) that prestige scores should not be abandoned because previous indicators of them have been out performed by SES scores and (2) that prestige scores have additional utility as a vehicle for indexing an individual's participation in the celebration of the overall scheme of societal values.

Pitfalls in Reworking Old Scores

Given the desirability of recelebrating occupational prestige scores to fit the new occupational coding scheme of the 1980 census, there remains the signal issue of whether this should be effected by reworking the extant prestige scores from the 1960s or by collecting new and temporally relevant prestige scores explicitly designed to match the 1980 occupational codes. The principal argument in support of recelebrating prestige scores on the basis of those already available from the 1960s is hinged on the assumption that prestige scores are stable over time.

There are several methodological difficulties which are readily apparent in attempting to use occupational evaluations from the 1960s to devise occupational prestige scores for a contemporary classification assigning jobs to detailed occupations.

First, the work on occupational prestige was not intended to yield prestige scores for all occupations. Devising a prestige scale for all occupations was a secondary task which Siegel achieved by pooling occupational evaluations obtained from the several surveys designed primarily to pursue substantive questions. The extant prestige scores for all occupations in the 1960 and 1970 occupational codes are, therefore, already jerry-rigged in large measure. Many of the matches effected between titles rated in the prestige studies of the 1960s and the detailed occupational codes of the 1960 Census Of Population are at best approximate. Mapping these titles into the 1980 occupational code would yield not only a higher incidence of Poor matches, but also some totally unmatched categories which could be assigned prestige scores only on the basis of informed guesswork.

Second, fitting the occupational prestige scores for the 1960s into the categories of the 1970 detailed occupational code is manageable because of the gross similarities between the detailed occupational codes of the 1960 and 1970 Censuses of Population. Changes in the occupational code between 1970 and

1980 are much more extensive. Under the 1980 classification scheme, for example a 1970 category, "Official.3 and Administrators; Public Administration, Not Elsewhere Classified (n.e.c.)" has been divided into 11 categories, distinguishing some prestigious pursuits like "Legislators," "Accountants and Auditors," "Judges," and some seemingly less esteemed occupations like "Purchasing Agents and Buyers, n.e.c." The single score that applied in 1970 is probably no longer appropriate to define the prestige of the heterogeneous set of new categories spawned. To take another example of heterogeneity in terms of both content and prestige, the 1970 category, "Managers and Administrators, n.e.c., to was divided in 1980 into 52 categories including "Administrators and Officials, Public Administration," and administrators of "Farm Workers," and "Sales Workers." mapping prestige scores designed to match 1960 occupational categories into the grossly different categories of the 1980 occupational code becomes a more hazardous enterprise which would doubtless incur greater errors of estimate.

Third, one way of generating prestige scores for the 1980 occupational codes from the earlier materials would be simply to calibrate the new scores by applying the known transition matrix between the 1970 and 1980 occupational codes to the prestige scores for the occupational categories. This operation would require no new matching of occupational titles whose prestige has been evaluated to census code occupational categories. Instead, it would simply calibrate the prestige of a 1980 occupational category as a weighted average of the prestige assigned to its occupational contents in the earlier code as demonstrated by Stevens and Hoisington (1987). In a few cases, the prestige scores would be identical, because the job contents of the 1970 and 1980 occupational codes are identical, but in many cases, the new scores for 1980 detailed occupational categories would be weighted averages of the scores assigned to the 1970 occupational codes (see Kubitschek, 1986).

Plausible as the above operation may seem, it is subject to a couple of obvious defects. In the first instance, it involves a methodological departure from earlier efforts to assess the prestige of an occupational category. Earlier efforts involved examining the job content of an occupational category and picking one or more titles thought to characterize it. This is relatively easy for " carpenters," somewhat more difficult for "lawyers and judges," and virtually impossible for 11 clerical workers, not elsewhere classified." By comparing the job content of an occupational category (by using The Classified Index of Occupations and Industries) with the occupational titles used to devise a prestige score for the code category, it was possible to make at least a gross assessment of the validity of prestige scores. That would not be possible with the weighted averaging proposed above, since the prestige derived for some occupations would rest on prestige scores for occupational titles whose members now reside in a different code of the classification. Furthermore, prestige assignment would rest on the plausibility of both matching and averaging, rather than on matching alone.

Another methodological shortcoming with weighted averages is that they will undoubtably reduce range of occupational prestige scores. If this does not happen, it is only because the job contents of the highest and lowest rated occupations in the 1970 code are identical with their counterparts in the 1980 code. This is not very likely. In fact, Stevens and Hoisington (1987), who recalibrated prestige scores using weighted averages, report that the range of prestige scores has been truncated particularly at the bottoms (9.3 - 81.2 for 1970 versus 14.7 - 81.1 for 1980.).

The foregoing methodological difficulties in using the 1960 materials to devise scores for the 1980 occupational code are not necessarily fatal ones. However, short of collecting a new data base, there is no sound way to assess the usefulness and validity of such an exercise.

Design for a New Inquiry

There is only one plausible benchmark for a new study of occupational prestige which will yield contemporary prestige scores for all occupations while providing a new landfall for the purposes of monitoring change. The relevant benchmark is the study conducted in 1964 based on an area probability sample of 923 adult Americans, each of whom was asked to evaluate some 204 occupations according to their "social standing."

If the sole purpose of a new prestige inquiry were to monitor change, it would be desirable to replicate this 1964 study as nearly as possible. However, a new prestige inquiry should aspire not only to assess change but to build upon and extend previous studies. It should attempt to construct a superior prestige scale for all occupations by including new and alternative occupational titles to secure plausible ratings for the new detailed occupational classification. Pure replication of the 1964 study would not serve this latter purpose very well, since the 204 occupations it contains not only fail to cover the detailed census categories, but also comprise a purposively biased sample of the occupational spectrum. The occupations covered by the 1964 inquiry reflect compromises worked out to serve multiple purposes. Only a subset of the titles were selected to provide a representative coverage of the detailed titles in all major occupational groups. Other titles were included to secure complete coverage of the detailed occupations covered by a post-censal study of scientific and technical . occupations not available in the census reports; to facilitate some matching between industries and particular occupations; and to pursue particular research interests. The results were perhaps interesting at the time, but there is little point in replicating them. Instead, partial replication and appreciable extension of the earlier investigation is preferable.

In the 1964 study, respondents sorted small cards bearing the occupational stimuli into a "ladder of social standing," a piece of cardboard upon which a ladder with nine rungs was printed. On average, respondents were able to sort the 204 occupations into the ladder of social standing in a little less than 20 minutes.

In a replication fielded with the NORC General Social Survey in 1989, we incorporate a partial replication of the 1964 study by (1) retaining the same stimulus question, (2) reproducing insofar as current technology permits not only the "ladder of social standing," but the actual physical shape and appearance of the stimulus cards to be sorted, and (3) including as many of the original 204 titles in the new study as is plausible.

We depart from exact replication to achieve a substantial expansion of occupational content and to reduce the rating task to a 15 minute segment of the NORC General Social Survey. We require raters to evaluate only 110 occupational stimuli. We extend the occupational coverage by asking subsets of raters to evaluate different, but overlapping, subsets of occupations so that the total number of occupations evaluated by some segment of the sample will be substantially larger than the number of occupations evaluated by any particular respondent. The main departure from the earlier study is, therefore, the use of subgroups of respondents to rate subsets of occupations, rather than having every respondent evaluate every occupational title--a deviation justified by the high consensus among respondents regarding the prestige ordering of occupations.

Conclusion

Major changes in occupational codes mean that researchers lack prestige scores keyed to the new categories of the 1980 Census of Population. New scores could be obtained either by collecting new data or reworking old data. We argue against accepting old scores that have been reworked (say, by applying a known transition matrix from 1970 to 1980) on several grounds, both methodologically and theoretically.

First, such an effort would be based on earlier scores constructed from a biased selection of occupational titles and already jerry-rigged once to accommodate the changes to the 1970 occupational codes. Second, the validity of new scores would depend not only on the plausibility of matching occupational titles (as in the earlier conversion), but also on the plausibility of weighing to redistribute occupations to new categories. Third, the reduced range of prestige scale is an artifact of weighted averaging.

Given these methodological drawbacks to reworking old data, basing new prestige scores on newly collected data is an alternative that must be weighed. There are two arguments against the usefulness of new data collection.

First, occupational prestige is known to be highly stable over time. Although some part of this observed stability in overall prestige ratings no doubt results from the correlation of extremes (i.e., the overrepresentation of high prestige and low prestige occupational titles), this temporal stability would argue against a need for new data had previous research not also identified some systematic changes in occupational evaluations

between 1947 and 1963. We argue that given the passage of a quarter century since the establishment of the first adequate benchmark for monitoring change, it is conceivable that some occupational evaluations will have changed, at least on some particular occupations that are likely to be influenced by the changes in the occupational and industrial order. The prestige scale derived from reworking old scores will not enable us to investigate such changes in the public's evaluation of occupational prestige.

Second, prestige scores are known to compare poorly to socioeconomic status scores when it comes to explained variance. However., U.S. scores were an afterthought based on surveys fielded for another purpose. Israeli prestige scores, based on data explicitly collected to generate occupational rankings, outperform socioeconomic scores. Even without the possibility of flawed U.S. scores, the conceptual importance of prestige in the American core value system (and its systematic distinction from socioeconomic status in the minds of respondents) would argue for continuing the tradition of prestige evaluations.

The 1989 NORC General Social Survey collected new prestige evaluations from a representative sample of 1500 Americans. Although the instrumentation and occupational titles replicated the 1960s baseline surveys to the extent feasible, the number of occupational titles to be evaluated by each respondent was reduced to accommodate a shorter interview. Also, to insure complete occupational coverage, the sample of respondents was divided into 12 subsets, each of which assessed the occupational standing of an overlapping set of occupational titles. The results of this data collection will be the first new occupational prestige assessment in twenty-five years and new prestige scores keyed to the new occupational codes of the 1980 Census of Population.

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