

SELECTED PROBLEMS OF WELFARE AND PRODUCTION IN THE NATIONAL ACCOUNTS

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A number of rather traditional problems relating to the estimation of the national accounts have been raised in the recent literature. This paper examines five of these problems from the point of view of a government statistician working within certain time and resource constraints. Credibility, comprehensibility, theoretical validity, cost and analytical usefulness are the criteria which should aid in deciding how to treat such matters as the extension of the boundaries of economic production, proposed changes in the categorization of both final and intermediate expenses, the treatment of "total" welfare and estimation relating to the so-called underground economy.

INTRODUCTION

In order not to disappoint the reader, let me state at the outset that this paper contains little original wisdom but merely candles some old thoughts in a new light. However, as a government statistician, I feel that I must take issue with some of the thoughts expressed in the recent re-examination¹ of the basic practices and theoretical concepts on which the national accounts of the western economies have been based since the end of the last war. I have used both the term "feel" and the first person singular purposely so that I can state my beliefs about national accounts at the outset. Despite the quite natural desire of national accountants to be thought of as rational economists and precise scientists, many of our attitudes and arguments are finally founded on what we more or less intuitively or empirically—but not always entirely rationally—feel to be feasible from a statistical point of view, enlightening in economic analysis, and helpful for policy purposes. Government national accountants are further constrained by the fact that these objectives must usually be accomplished within a cost and, above all, a time-bound framework. These limits have tended to lead official statisticians to strive for reasonable orders of magnitude, to capture significant changes, to opt (where possible) for simple methodologies, and to remain closely tied to institutional reality rather than to obtain the same degree of theoretical precision for all series no matter how costly the manner of achieving it or how esoteric the concepts.

This paper is not a complete tour d'horizon, but restricts itself in the main to five concerns. I have endeavoured to keep the five topics as separate as possible, but the reticular nature of the national accounts frustrated this effort at times.

I start by expressing some thoughts on the problem of capturing welfare aspects via the national accounts. I then articulate my reasons for wishing to have most so-called defensive, necessary or instrumental expenditures remain

¹See bibliography.

part of final expenditures and, on the other hand, enumerate my objections to converting certain intermediate business expenses to final expenses. Some aspects of the question of attributing monetary valuation to leisure time and other “own time” valuations are discussed. I make a plea for estimating the value of production arising from criminal and underground activities, and lastly I conclude with some views on what practical statisticians should do.

I

The recent re-examination of national accounts has resulted in basically differentiated types of problems. There are areas where there is reasonably wide acceptance of new concepts but where either data or methodology for estimation are still in the development stages, e.g. some private non-market production not now included in the national accounts. There are topics where both concepts and data are still subject to debate among the experts, such as the inclusion of leisure time in GDP, and lastly there exist conceptually and statistically sound estimates whose precise place and classification in the accounts are still debated from time to time, e.g. the treatment of transportation to work expenditure.

There is near unanimity in the profession on the desirability of extending the statistical boundary of production. Unanimity, however, stops at the precise definition of such production, and the methodology of measuring this activity and more particularly its valuation are still the subject of discussion. Most official statistical agencies either have not yet undertaken such estimates regularly (or intermittently), or think that such estimates as have been made lack sufficient statistical rigour for inclusion in the regular accounts estimates. Even where good estimates exist or will be undertaken, long-run historical comparability may force such estimates to remain “below-the-line” items for the time being.

The option of showing items “below-the-line,” employing a “building-block approach,” or giving users the opportunity to “roll their own” should, however, not be used as an intellectual escape hatch to encourage official estimates whose inclusion in the accounts cannot be justified per se. The building-block approach is a practical solution to bypass problems of historical continuity, international comparability, and intermittent data availability. It should not, for the items thus treated, be an *ipso facto* indication of either lower statistical quality or weaker intellectual validity than that inherent in other national accounts components. While, in theory, the building-block approach can be employed to furnish the national accounts users with all the variety they need or may want, and while computer technology makes the rearrangement of the accounts in almost any pattern relatively easy and not too expensive, in practice, official statistical agencies have limited resources with which to create statistical data. It is simply not realistic in the foreseeable future to expect statistical agencies to be able to accede to all requests emanating from an eclectic approach. Hard choices as to what to include or exclude in official estimates will, therefore, continue to have to be made. This process would certainly be aided if a broad consensus could be reached among the users of the accounts for then the official statisticians would be relieved of the rather thankless task of second-guessing their customers.

Proponents of the extension of the accounts into certain welfare aspects have, in the main, restricted themselves to wishing to measure economic welfare in the Pigovian sense. However, since this type of restriction seems to permit the inclusion in the national product of anything to which the human mind can attach a monetary value, it does not provide a good decision tool as to what should be included or excluded from economic production. Perhaps it is worthwhile recalling that in western economies the debate as to what constitutes product begins at least as soon as we leave the profit economy in the narrowest sense (e.g. the possible division of government expenditures into intermediate and final expenditures). The reason for this is relatively simple, but often forgotten. The profit economy counts actual products—not activities. Thus, if fruit is produced but is unsaleable and rots, all the activity embodied in the spoiled fruit is counted as a loss in the profit and loss accounts of business and the activity, as well as the product, is eliminated from total production. This almost automatic unambiguity is removed once we include activities resulting in government or household services in the accounts. However, these types of services are subject to different degrees of ambiguity. In the government sector, services, insofar as they are purchased in the market, have at least a unique valuation, while certain household services rest for their valuations much more on the estimator's choice of the valuation methodology. While some accounts revisionists have expressed the desire to include only those activities to which the "third person principle"² can be applied, others have extended the principle of economic production to almost all human activities. This course of action has been recommended on the grounds that one always has the choice of engaging in remunerative activity instead of whatever else one happens to be doing at the moment. Thus, on the assumption that man is *homo economicus* at all times, it is posited that non-remunerative activity is valued in some manner in the doer's mind. This valuation will be at normal market prices if such an activity can be found in the market, or if it is an activity such as self-amusement, at the doer's occupational (marginal) remunerative market rate. The inclusion of all or most activity as economic product, however, ignores the interpretation that activities subject to the third person principle means not only that I can hire someone to do the work when I choose not to do it myself (which I cannot do when I want to eat or make love), but also that, on the other side, I can buy the product as a readymade package as it were; i.e. a clean house, a repaired car, or supervised children. This, then, brings us to another and very significant difference between near economic and other activities such as leisure, eating, etc. If we were willing to countenance sufficient institutional changes—either experimentally or really—so that all the economic products and/or activities could be sold in the market, the possibility of actually counting these products via the profit and loss account would at least intellectually be comprehensible. Obviously, under these circumstances the possibilities of actual market exchanges are also imaginable. There is, however, no intellectually conceivable manner in which the actual product (and hence value) of the activities which one must

²See Hawrylyshyn (1978), p. 17.

perform oneself can be established, nor is there any manner or concept by which such services could be exchanged between two or more individuals.

To pursue the measurement of economic welfare beyond the bounds where one can even think of an exchange at arm's length, and where only the possibility of a perceptual and individual self-exchange remains, results in an admixture of personal and economic welfare which a philosopher rather than a statistician should attempt to disentangle.

II

The problem of which part of government expenditures should be treated as final expenditures is, of course, almost as old as national accounting itself.³ The issue of what to do about regrettable necessities by consumers is not much younger. The problem also appears to have been compounded by a commingling of considerations of economic welfare and the measurement of unduplicated production. Dealing with economic welfare first, while I cannot claim any great new insight into the normative problem of what should be regarded as a regrettable necessity,⁴ there appears a desire to extend this item on what, for want of a better term, one might call purely hedonistic grounds. If we exclude government, police or fire expenditures on the grounds that these merely provide the infrastructure of welfare rather than welfare itself, should we not also exclude consumer expenditure on, for instance, private security systems? And if we agree to this, either because of consistency, admittedly the weaker argument, or because after all, we neither enjoy meeting this expenditure nor derive greater welfare when because of increased criminal activity we have to spend more funds on protecting ourselves, why should we not exclude expenditures on dentists when we have a toothache or car repair expenses after we have had an accident? Where do we draw the line? How much time and effort are we going to spend arguing about these items? How often do we change our treatment? How much will we be subject to the sway of fashions? Some of these arguments come close to stating that only consumer expenditures which increase our welfare—and this seems to be almost equated with enjoyment—should be counted as final expenses. Frankly, as a government statistician, I prefer institutionalism to hedonism and would like to simply count the things and services people buy! (I touch on the question of how to measure changes in real welfare again in section IV.)

It can also be quite reasonably argued that, since in many cases welfare is in the eye of the beholder, the treatment of such debatable consumer and government expenditure items is one which is ideally suited to the building-block method. Since in many cases the requisite detailed information is either already contained in published accounts data or could be made available at relatively little additional cost, such data can indeed in most cases be articulated. There remains, however, the problem of measuring unduplicated product. In the case of government expenditures which are of a defensive nature, one could presum-

³For an excellent and concise summary of this discussion, see Campbell and Peskin, p. 6.

⁴For some very interesting—and I think rather novel—illustrations of this, see UN Document, Series F, No. 22, *The Feasibility of Welfare-Oriented Measures to Supplement the National Accounts and Balances: A Technical Report*, United Nations, New York, 1977.

ably deduct them from the expenditures side on the grounds that they do not add to welfare and from the production side on the grounds that there is always the possibility that, at least with respect to the government product portion of Gross Product, there remain some elements of double counting in the accounts. However, what do we do if, for instance, we want to exclude transportation to work expenses of consumers, when we come to the product side? It is, of course, easy enough to make a mechanical adjusting entry for such deductions at the total GNP level, but what does this do to our concept of production?—e.g. the wages of the bus driver and the return on the capital which effectively brought us from home to our place of work? Are these factors no longer employed in production? Such treatment would, of course, not be impossible. The Material Product System (M.P.S.) of national accounting excludes by definition most of what we term personal services and has managed to serve the analytical and policy needs of centrally planned economies fairly well. However, the addition lately to the M.P.S. of a Supplementary System of Indicators of Non-Market Services (SINS) raises some interesting questions which I am unfortunately not sufficiently experienced in the M.P.S. to answer.

I would also like to mention some difficulties I have with the proposal that in order to catch changes in welfare we should make some deductions for the so-called disamenities of modern life; e.g. increased crowding in cities, less safety in the streets, higher levels of noise in the environment, or more pollution in the air. Quite apart from the difficulties of measurement associated with these, which both conceptually and statistically are formidable, the problem of assigning meaningful dollar values to such data as one may eventually obtain appears practically insurmountable. There are two further questions which trouble me. Firstly, if we followed all the recommendations which are based on welfare considerations and deducted, for instance, private protection expenditure, not only from the expenditure, but also from the product side, would we not already have made a deduction for less security? Would another deduction for disamenities not simply measure the same change in welfare as the previously deducted higher security expenses? The second question is one which to my knowledge has not been raised in the literature. If we deduct something for “baddies,” should we not add something for “goodies?” The plethora of choices of cultural facilities (not their use) in most large cities, the convenience of efficient transportation in (some) large urban agglomerations, the possibility of having interesting friendships and stimulating exchanges of ideas in densely populated areas, the tranquility of specially protected nature resources, and the greater enjoyment of family life because we no longer have to earn our bread with the sweat of our brows are not aspects of welfare which are now reflected in the production data of the national accounts. If we wish to count these non-articulated factors, how are we going to do it and, again, how are we going to assign monetary values to whatever real measures we could obtain? Even to construct these real measures at the present stage of statistical development would be a major breakthrough. So-called perceptual indicators have attempted to do this with some success, but one of the main problems in this area is that we are dealing here with aspects of living which people find hard to articulate—even to themselves. Many decisions, such as where to live or what career to pursue, or how

to react to external circumstances, are often based on emotions rather than a fine balance of pros and cons—which people may even, at times, be psychologically reluctant to attempt. This seems to be one of these cases where it is wise to pause before jumping from concept to measurement. To assign monetary values to such weak real data or arbitrarily impute some notional values to amenities and disamenities cannot possibly increase the usefulness of the accounts. Instead of ascribing artificial values of doubtful validity to the advantages and disadvantages of modern, and particularly big city, living, it would be simpler and probably more in line with real motivations to leave these items outside the national accounts calculus and view the disamenities as the price for which the desired amenities are exchanged.

III

Proposals have been advanced to create a category of current final business expenditures which might include such items as collective expenditures for employees (e.g. recreational facilities and parking lots provided free of charge), the cost—or certain parts of it—of radio and T.V. programs now financed out of advertising revenue, and current expenditures to control or abate environmental pollution. While the arguments for these proposals possess a certain appeal, and while it can be claimed that similar expenditures such as antipollution costs or the financing of T.V. programs should be treated identically whether made by the business or government sector—as is not the case in the present accounts—the rather traditional case for the current treatment seems to have been forgotten and bears reiteration. First of all, I can only repeat the argument for institutional practicability which I have advanced in section II. Despite the longstanding debate of final vs. intermediate expenses in the case of government expenditures, and despite even the possibility of some double counting, we have classified government expenditures as final. To do otherwise would land us in what has been termed a quagmire of decisions which would entail needless argument, give instability to the accounts, and pose difficulties for both spatial and time comparisons. Not only can a strong case along the same lines be made for leaving consumer regrettable necessities with consumer expenditures and leaving current business expenses in the intermediate expense category, but the case is strengthened when one recalls that consumers and businesses perceive these as expenditures from disposable income and business revenue respectively.

The argument that T.V. and radio entertainment and pollution control and abatement should be treated in the same manner in the accounts whether financed by business or government because they are the same goods and services does not stand too close an examination. First of all, like expenditures are not always treated alike in the accounts. Refrigerators bought by consumers are current expenses and refrigerators bought by investors in apartments are investment goods, though they may very well be identical refrigerators—or perhaps even more validly, writing paper bought by consumers and government is a final expenditure, while the same paper bought by business is an intermediate expense. Secondly, it can be reasonably argued that neither T.V. and radio entertainment nor environmental protection are identical products when provided by govern-

ment or business. A good portion, for instance, of commercial T.V. and that provided by the BBC in the U.K., the CBC in Canada or the PBS in the U.S. is quite different in content as well as purpose; furthermore, such changes as consumers are able to bring about in the provision of these services are accomplished by very different means.

Thirdly, if we balance such final business expenditures either by deducting these expenditures from consumer expenditures (since they are implicitly included in the price of total consumption), or by imputing an income to consumers, we are not only violating the institutional framework—which we do in some other instances, but which one can reasonably agree should be confined to a minimum—but we are also distorting both the consumers' perception of reality and the market mechanism by which this is brought about. Lastly, if we make an imputation for these expenses, there is the implication that something is missing from GNP. But what is missing? Why are the benefits provided by "free" T.V. or pollution control any different from "free" credit or delivery provided by certain stores? Here too, incidentally, the customer who pays for these services in higher prices and the person who actually avails himself of the opportunity are not always identical.

While some of the above arguments on both sides are also applicable to the provision of certain *collective* benefits, such as free parking privileges or subsidized cafeterias, to employees by the employer, the argument that these fringe benefits are payments in kind is unacceptable. The term "payment" (in kind or cash) surely implies that the payment is to be apportionable to the employee, e.g. room or board given to specific employees as part of a wage-packet, which is not the case with most of the items under consideration. It is probably true that employees take into account—although I venture to say to a limited extent only—the provision of such services when they seek employment; this is, however, also true of other factors, such as whether the place of work is adequately lit and heated or airconditioned, whether the work is pleasant and the work place is clean, and do we, therefore, make heat and light provided by business a final expenditure? Where indeed do we stop? Imputations for clean toilets and cold drinking water? Logic and rationalization without being anchored to institutional reality can not only lead us to a quagmire, but can so encrust the accounts with mud that they cease to be viable economic tools.

Finally, a word about the concept of total consumption of the population. This concept has without doubt analytical value. It can, however, be constructed from material which is presently contained in the accounts. If the required information is not fully articulated in the present accounts, this is a task we could set ourselves without changing any of the basic national accounts concepts. Indeed, even if one made some of the suggested changes, it would still be necessary to analyze and reconstitute government expenditures in order to derive total consumption of the population.

IV

I have already suggested that there is a fundamental difference between activities which create economic products and services having an actual or

potential exchangeability and those activities whose performance creates their own utilities with no exchangeability in any market.

Measures of economic welfare can well include the former but should stay clear of such matters as placing a value on leisure time and even on learning time. If we really want to know how much our welfare has improved by the changes in and use of available leisure time, educational attainments, or degrees of healthfulness, it would be much more effective to measure directly both the change in the quantity and quality of these factors. In asking, for instance, how much more leisure we have now than formerly, how well we use this leisure, how healthy or well educated we are, we are dealing with what Milton Moss has called welfare outcomes. These are also the very same phenomena which social indicators have endeavoured to conceptualize and quantify.

In these efforts we have learned that it is indeed difficult to escape from measures of instrumentality. Conceptual and statistical problems still abound, and we certainly have not yet reached a state of information overload with respect to welfare. There is, however, an almost unanimous agreement among social indicator workers that it is neither practical nor theoretically desirable nor analytically sensible to have one overall measure of welfare. It seems, therefore, difficult to defend the desire of some national accountants for the one all-encompassing indicator.

Having thus made clear my own preferences for the exclusion of such welfare measures from total product, I would be presumptuous to claim that the arguments which I favour have won or soon will win the day. If, therefore, we wish to include in the accounts either welfare outcomes or at least the time it takes to accomplish them (expressed in monetary terms), why must they be valued at average rates of return? If the valuation is intended to be more than merely notional, should we not value such time at overtime rates at which labour beyond the "normal" duration of work is actually carried out? The reason for this seems fairly simple. Those who have the opportunity to make the direct nexus between pay and time worked usually value the additional (marginal) work time higher than their regular work time. Indeed, in many instances, there are several escalating steps in this valuation, varying with the length of additional time worked and/or its specific incidence during the day, week or month. As a matter of fact, since marginally higher pay quite often brings forth additional work, can one not argue that time not worked should be valued at an even higher rate than the highest overtime rate, since the highest overtime rate would result in additional work—not free time.

If the above argument has any degree of validity, it raises, of course, both conceptual and very, very practical problems (neither of which have dampened imaginative "statisticaneering" in the past). At the theoretical level, it would leave the valuation of non-work time even for hourly rated occupations largely indeterminate. Practically, the concept of overtime rates would, of course, be difficult to apply in areas of economic effort where it does not prevail in the real world; one might even be forced to look into such rather tricky topics as psychic incomes. Finally, the valuation of leisure and other non-work time at premium overtime rates would, in all likelihood, put such large and rather

arbitrary values into the accounts that the other numbers would become swamped, and render meaningful analysis troublesome.

V

In this section I am going to switch sides and, instead of arguing for the status quo, try to persuade my fellow national accountants to undertake some extensions of the accounts into some further aspects of non-market production. My attitude, I hope, is not purely whimsical, but basically finds its justification in policy analysis. While some of the proposals against which I have argued can and have been based on grounds of logical consistency and completeness of the accounts—particularly with respect to the measurement of welfare—such changes would in the majority of cases not only not improve policy analysis, but might under certain circumstances make it unnecessarily complex. However, particularly lately, economic policy analysis based on the accounts may at times have been amiss in playing its full role because we have not taken account of the economic production resulting from criminal and underground activities. While, in certain jurisdictions, underground activities or their non-declaration for tax purposes may indeed be criminal offenses, I should like to draw a distinction between underground and criminal activities. Criminal activities which result in economic production are defined as those activities which are in many jurisdictions legally classified as crimes and are usually morally harmful; in other (usually few) jurisdictions they are considered as legitimate economic transactions; i.e. the trade in and use of narcotics, the practice of prostitution, the provision of and participation in gambling, and arson for hire. Insofar as murder is performed for profit and by professional hitmen, theoretically this “service” should, of course, also be included. However, hopefully both for the sake of society and statisticians, this is still a statistically insignificant event. (To those who find the inclusion of killing for pay too morally repugnant for even theoretical inclusion in the accounts, may I remind them that there is a very explicit category for including military pay and allowances in most national accounting systems.) These activities are, therefore, activities which are of a “service” type nature, “in which the receipts are obtained with the consent of the payer,”⁵ not those like theft and robbery which forcibly transfer goods within or between sectors. Underground activities are simply productive economic activities which escape measurement either because they are barter type activities or because they are hidden from government revenue departments and/or official statistical agencies because people wish to avoid taxation in one form or another.

If recent press reports are to be believed,⁶ the moneys involved in criminal activity, particularly in the drug trade in the United States, but probably also in Canada, and perhaps to a somewhat lesser degree in other countries, have indeed become very large. It may very well be that some of our balance of payments

⁵UN: A System of National Accounts and Supporting Tables, *Studies in Methods*, Series F, No. 2, Rev. 1, United Nations, New York, p. 6. It may be noted that this is the “old” S.N.A. The latest S.N.A. is silent on this subject.

⁶The Underground Economy, Financial Implications of Illicit Trafficking in the United States, *International Currency Review*, 12, 5; Money Trail, *The Wall Street Journal*, Nov. 26, 1980.

data are already slightly distorted by these activities. Criminal activities appear to have become large enough and are carried on by sufficiently well organized groups that serious attempts at their measurement should be undertaken. Furthermore, they are probably one of our growth industries and hence affect the change in, and not only the level of, our measurements. Lastly, insofar as some of these activities are not defined as illegal in all countries across all time, temporal and spatial comparisons are distorted by their omission from the accounts. *A fortiori*, the same reasons as above apply to the inclusion in the accounts of those activities which are now missed because persons and businesses seek escape from taxation. As a matter of fact, these underground activities have already been given serious study.⁷ I believe—and obviously here I am back in the area of faith and intuition—that difficult as such measurements may turn out to be, the statistical problems would not tax our ingenuity more than some of the other “soft” estimates national accountants have attempted (e.g. some of our imputations for income in kind or rent). The orders of magnitude which such efforts would yield would in all likelihood possess sufficient statistical vigour to prove valuable in economic analysis.

IV

In conclusion, I should like to make two pleas to my colleagues. These pleas are not directly related to the matters I have discussed above, yet they arise from some of the specific national accounts and also more broadly based economic literature of the last few years. First of all, as economists, we today face great doubts about the validity of our theories. These doubts are generated both by our own profession and our clients. Part of our theoretical world is crumbling as reality behaves in what, to some of us, has turned out to be a completely unpredictable and theoretically contradictory manner. Yet much of the literature and economic research concern themselves with fine points about theories whose validities have already been seriously questioned. The time seems to have come for a return to the basic aspects of economic analysis and for economists to deal with concrete economic problems in the real world.

The second plea is related both to the above and to the main concern of this paper. In most of the refinements in the national accounts discussed above, simpler methods of estimation are to be preferred to convoluted and complicated estimates. In most instances, one is only interested in and must be satisfied with rough orders of magnitude (of level and/or change) and should not be lured by the illusion of precise estimates. Many of the estimates must by their very nature be based on second and third degree assumptions and are only rarely empirically verifiable. Furthermore, some of the concepts themselves are difficult to explain to the layman (and in some instances perhaps even to other national accountants), and particularly for the official statistician, the simple method of estimation is the elegant one. It can be reasonably well communicated to our public, it fulfills its intended function, and it saves resources!

⁷For details, see Gershuny; Kenadjian; Macafee; Tanzi.

Lastly, a confession of cowardice. I have purposely avoided giving case examples of what I spoke of in this last section. I admit that that which is esoteric and arcane is often in the eye of the beholder and others may not have the same point of view as I. However, let whomever the shoe fits wear it, and no offence meant.

CONCLUSION

Summarizing then, I have argued that we should expand the national accounts to include third-person-type non-market activities in order to round out welfare and production aspects of the accounts. While historical and international comparability and continuity can be maintained via "the building block method," this, however, should not be an excuse to include statistically softer estimates. On the other hand, welfare should not be equated with hedonism. It ill behooves us to eliminate activities from the accounts merely because we perceive no direct enjoyment or welfare in them. Our present conceptual framework and statistical techniques also seem inadequate to formally evaluate non-market amenities and disamenities. The arguments for changing certain final government and consumer expenditures to the intermediate type and for switching some collective intermediate business expenditures into the final category appear very reasonable when judged in isolation. However, such proposals cut across well-established market and institutional arrangements and would thus substitute one set of arguable conventions for another. I therefore deem it more efficient to leave well enough alone. If theoretical arguments that activities like leisure have no place in the national accounts do not carry the day, logic would demand their valuation above the highest overtime rate. This might reduce the whole matter *ad absurdum* because the additional figures would be so large as to vitiate the analytical usefulness of the accounts. Departing from my conservative stances, I maintain that so-called underground, illegal or criminal activities seem to have become so large that policy formulation would be aided if some estimates for these types of production were added to the accounts. I conclude the paper with a *cri de coeur* for realism in analysis and simplicity of methodology.

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