

Statistics

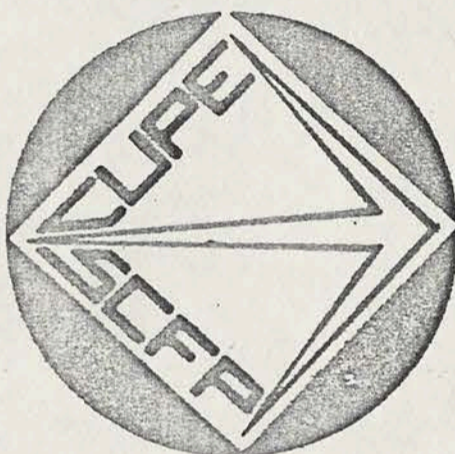
Return.

1977

SEE PGS 20-38
VALUABLE.

British Columbia
University Conference

Sheet B.



Research Department,
Canadian Union of Public Employees,
October, 1977.

The recent AIB advertising blitzkrieg is also an opportunity to learn how the government lies with statistics in order to protect the interests of the business community. Let's look at some of the techniques used by the government.

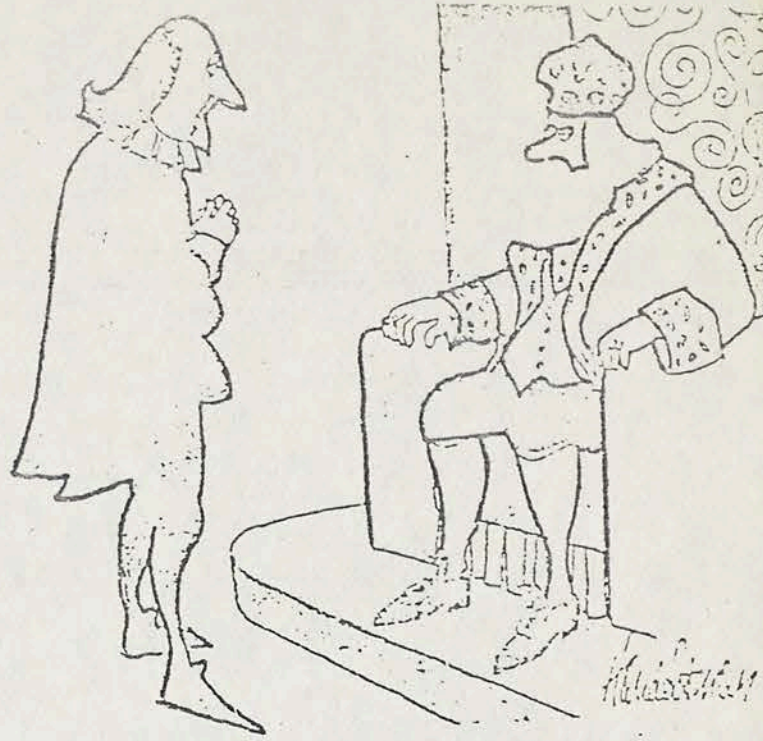
The AIB ads used two gimmicks to distort statistical data: first, they used uneven periods of time in its before and after comparison of the effects of controls on income; second, the ads used different size scales on graphs to give you the false impression of how much real incomes are growing.

The AIB ads compare a nine-month period ending just before controls were imposed last October 1975 and a three-month period ending in May 1976.

Based on this unequal comparison, that is using different benchmark periods, the AIB claims real incomes--the amount left after discounting for inflation--have improved under controls. But the picture is different when equal periods, based on similar or comparable benchmark periods are used.

Using figures supplied by the Federal Department of Finance, it turns out that real incomes have increased less if equal three month periods are compared. It turns out that real incomes in the March-May period of 1975 over 1974, compared with the same period for 1976 over 1975, have increased less than the government calculates using the unequal method shown in the AIB ads.

The ads state that real incomes grew by only 3% in the first nine months of 1975, then compare this with a 3.6% increase in the March-May (1976) period this year. But, if the comparable three month period last year is measured, then real income was only up 3.3%



"I'm really upset that the people don't believe me anymore. Perhaps I should use a different facial expression when I lie to them."

The second technique used by the AIB ads to distort the statistical evidence is sneaky and subtle--a real classic in statistical manipulation--namely, using misleading graphic representation. This is done by drawing the part of the chart showing a 3.6% real income growth after controls on a larger scale than the 3% real increase section in the before the controls period chart. You have to look hard but the graph for real income growth after controls were imposed is disproportionately wider and higher.

As Huff says in his book referred to earlier, ". . . whoever the guilty party may be in [statistical manipulation], it is hard to grant him the status of blundering innocent." At the bargaining table when comes to statistical manipulation of data the real question is who benefits, who loses? The boss or the workers?

CONSUMER PRICE INDEX - REGIONAL CITIES

<u>Regional City</u>	<u>July C.P.I. 1971 = 100</u>	<u>Percent Change Since December 1975 / 1976</u>		<u>Percent Change Over Previous Month</u>	<u>Percent Change Over Same Month Previous Year</u>
St. John's	167.6	12.3%	5.8%	1.2%	8.4%
Halifax	157.5	11.7	6.2	0.5	8.1
Saint John	159.9	11.1	5.2	0.6	7.7
Quebec City	157.8	12.6	6.2	0.8	9.4
Montreal	159.1	12.1	6.2	1.4	8.9
Ottawa	159.0	12.1	6.1	0.7	8.8
Toronto	158.3	12.0	6.0	0.7	8.0
Thunder Bay	161.4	12.9	6.7	1.1	8.3
Winnipeg	161.9	12.0	5.5	0.6	8.2
Saskatoon	157.5	12.3	5.6	0.4	8.6
Regina	159.4	14.4	6.1	0.6	9.9
Edmonton	160.2	13.0	6.0	0.7	9.1
Calgary	158.8	12.5	5.9	0.6	8.8
Vancouver	162.4	13.6	4.6	0.7	7.1

Research Department,
Canadian Union of Public Employees,
September, 1977

Primer of Statistics For Trade Unionists

In order to help workers and negotiators defend themselves from statistical overkill and fallout coming from the media, government and from the Employer at the bargaining table, presented here is a primer of how to lie with statistics--and how to defend yourself. This Labour Research Supplement contains examples of statistical abuses, tricks and gimmicks to watch out for.

CARD-STACKING - GENERAL

Card stacking is the general name for statistical manipulation. Card stacking can be conscious and deliberate or unintentional and unconscious. Misleading people by the use of statistical material is sometimes called "statisticulation".

BIASED SAMPLE - GETTING THE ANSWER YOU WANT

The technique of using a biased sample means that there is a selective use of data, or the selection of favourable data which proves what you want it to prove--and all other unfavourable data is disregarded. The consciously biased sample is really a sampling error because the smaller the sample, the greater the likelihood of distortion of the data. If the sample is large enough and selected properly, it will represent the whole situation. The statistical results based on a sampling study are no better than the sample it was based on. Theoretically, in order to avoid a biased sample would require a representative random sample. Always ask how large the sample was, how representative, and was the data comparable? Examples: We all know of instances when an Employer has conveniently excluded other higher paying Employers in the community to create a downward bias in the average community wage figures. Similarly, the AIB claimed that negotiated settlements in bargaining units of over 500 people or more far exceeded the inflation rate. But settlements in bargaining units of 500 or more workers represent only 25% of all bargaining units and only 10%-10% of all workers in the labour force, (depending on the number of settlements in a given year). In order to ascertain how all workers and wage rates kept up with inflation would require a look at the Industrial Composite Average Weekly

REPORTING AND METHODOLOGICAL INCONSISTENCIES

Reporting inconsistencies can be conscious or unconscious. A change in the way in which statistical data is compiled and reported may affect their validity. As statistical reporting becomes more refined the figures change. A good case in point is medical statistics, where reported cases of a disease are not always the same thing as more cases of the disease. It's just that the number of cases are reported more carefully. For example, if a new diagnostic test is introduced for a particular disease statistics might be produced which show the incidence had increased dramatically. This is not necessarily the case, since the incidence may not have risen at all, but we are simply more capable of more accurately detecting its presence. (Also see Averages and Non-Comparable data below).

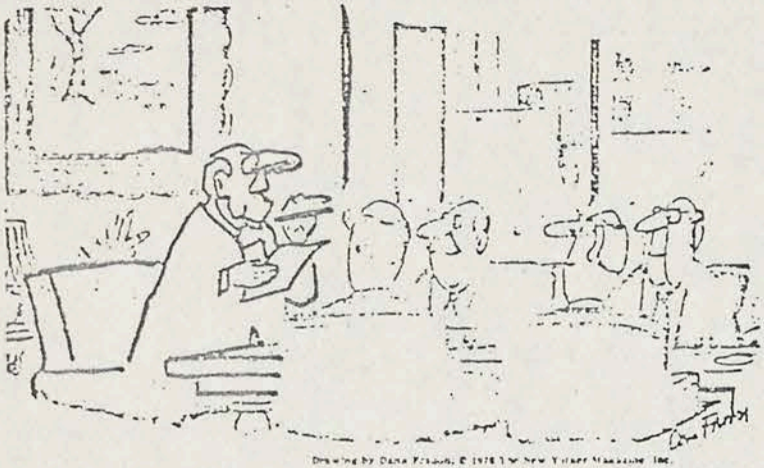
MISREPRESENTATION OF THE FACTS

Misrepresentation of the facts, regardless of what other name is used, is blatant statistical manipulation. A common example is consumer credit which is normally charged at a rate of 1% per month. But 1% per month is 12% per year--but they don't tell you that. Or take for example the 2% productivity figure used by the AIB to justify keeping your wages down. Statistics Canada, a government agency, states clearly: "real domestic product of commercial industries per man-hour increased at an annual rate of 4.3% for the years 1946-72". Quite a difference.

INCOMPLETE DATA OR INFORMATION

In order for any statistical calculation to be meaningful, the way in which it was derived must be identifiable. For example, is the wage increase or consumer credit payment calculated on a simple or compound interest basis? On what basis are profits calculated? As a percentage of sales or as return on investment. In looking at an

Employer's financial statement which method of depreciation was used?



"To close on an upbeat note, I'm happy to report we received 22 percent more in kickbacks than we paid out in bribes."

A classic example of incomplete data is the presentation of tradesmen's salaries. Suppose an electrician's rate is \$9.00 per hour which means calculated on 40 hours per week (2080 hours per year), it is \$18,720 per year (excluding overtime and fringes). Right? Wrong. The majority of construction tradesmen only work 6 months a year which means his annual salary is only \$9,360 and his actual hourly rate for time worked is only \$4.50. (Also see Extrapolation below)

OPEN ENDED INFORMATION

This is a variation on the incomplete information technique. It allows for misrepresentation of data based on ambiguity. For example, a newspaper headline screams: "Workers Get 24% Wage Increase". That's great except that doesn't tell you what the duration of the contract is--1, 2, or 3 years. And that omission makes a big difference--like 24% in a 1 year contract or 8% per year over a 3 year agreement. That information is usually buried in the last paragraph of the newspaper story.

THE MEANINGLESS STATISTIC

The meaningless statistic is one which is contrived and deliberately confusing. The meaningless statistic usually takes the form of improper identification of units of measurement or is presented in such a manner that the way in which it was calculated cannot be identified. Example: An Employer claims that the average wage rate in the bargaining unit is \$6.00 per hour. When pressed by the Union to reveal how this figure was derived, it showed the boss adding one regular hour at \$4.00 to one time and a half overtime hour at \$6.00 to one double time hour at \$8.00 for an average hourly rate of \$6.00. It would be hard to find an instance of a figure with less meaning.

THE DANGLING NUMBER

The dangling statistic is one which is taken out of context and is left to stand by itself to deliberately create a misleading impression. Example: A few years ago a corporation ran a full page ad which said: "XYZ CO. EXAMPLE OF PEOPLES CAPITALISM--OVER 3,000 SHAREHOLDERS OWN AVERAGE OF 660 SHARES EACH". This information by itself was true. What the ad neglected to mention was that there were 2 million outstanding shares in the company with 3 people holding 75% of the stock and the three thousand people referred to in the ad held only one-fourth of the shares among themselves. In fact, according to Census data the top 1% of all income earners in Canada own 42% of all stock while the bottom 50% of income earners own less than 10% of all outstanding shares of stock.

THE AMBIGUOUS QUALIFIER

The ambiguous statement is thrown in when presenting statistical material in order to maintain the pretense of being honest. For example, a housing developer states that "Our homes are so low priced that 75% of all families can have them available within their income". In the first instance this means 25% of all families cannot afford the price of this home and second, the statement is ambiguously qualified to the extent that the homes are only "available", not necessarily bought by the other 75% of the families.

PACKAGING THE FIGURES DIFFERENTLY

There are many ways of expressing any figure. The trick is to use the method that works best for the purpose at hand and hope that few who read it will recognize how inaccurately or inadequately it reflects the situation. Examples: In a corporation's financial statement the same facts can be expressed differently calling it a 1% return on sales, a 15% return on investment, an increase in profits of 40% compared with an earlier 10 year period, a \$10 million profit, or a percentage decrease from last year.

APPLES AND ORANGES - NON-COMPARABLE DATA

One of the most common tricks in manipulating or interpreting statistical data stems from the use of non-comparable data. That is mixing the units of measurement--mixing apples and oranges. In order for there to be any validity in statistical reporting and the interpretation of data, there must be methodological consistency, that is the data must be presented in similar units of measurement over the same time period. Some common examples of statistical abuse, error and confusion as a result of using non-comparable data are:

- Units of measurement shifted i.e., comparisons of weekly or hourly salary between groups with different hours of work.
- Confusing straight-time salary with total compensation which includes overtime and fringes.
- Shifting the base year--that is measuring the same units, but over a different time period as in the AIB ads above.
- Confusing simple and compound interest.
- Annualized year over year averages or yearly month over month increases which are used to express increases in the Consumer Price Index (CPI) which record the price increases in goods and services.



"Now, depending on how we read these accounting figures, we have either an excess profit or an excess deficit."

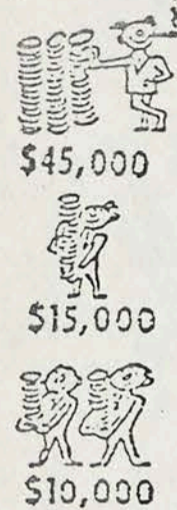
Another example from a "Business Week" story in the mid-1950's gives us an idea of how some professions serve the business community. The story reads, "Accountants have decided that 'surplus' is a nasty word. They propose eliminating it from corporate balance sheets. The Committee on Accounting Procedure suggests:.... use such descriptive terms as 'retained earnings' or 'appreciation of fixed assets'". So remember when you're given a statistical package, take the wrapping off.

- Changing depreciation accounting methods in corporate financial statements. There are at least 5 accepted depreciation methods used by accountants to write-off (amortize) used and worn-out (depreciated) equipment. The method used, especially if there is a change-over of accounting methods between financial reports, and if there is a shortened time period to write off equipment, will effect the level of profits reported by a corporation.

- Confusing gross pre-tax profits with net after-tax profits.
- Confusing type of percentage profits. For example, a few years back, General Motors reported an after-tax profit of 12.6% on sales; but for that same period GM's profit on investment was 44.8%.

CONFUSING AVERAGES

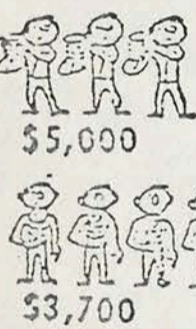
Perhaps the most abused statistical technique, especially when dealing with wage data in bargaining, is the use of averages. Note the plural--because there are different types of averages and each must be clearly identified so that there is comparable data. Different types of averages mean different things. All too often averages are based on the use of non-comparable data such as comparing "average" wage rates in large and small employers; union and non-union employers and male and female rates. Averages constructed in such a fashion are not only misleading and meaningless, they are based on the methodological error of using non-comparable data. There are four (4) different types of averages, each computed in a different way, having a different purpose and having a different meaning.



(1) Simple or Arithmetic Average - the "mean" as it is sometimes called is the most common average. It is the addition of all the items in a numerical series divided by the total number of items in the series. Thus, the simple average gives each item (or wage rate) in the series equal weight, but will tend to have an upward bias because high and low

← ARITHMETICAL AVERAGE

figures (salaries) have equal weight. Example: There are 4 job classifications in a bargaining unit with the following salaries: \$6 + \$5 + \$4 + \$3 = \$18/4 = simple average salary of \$4.50.



(2) Weighted Average - As pointed out above, an arithmetic (or simple) average gives equal weight to both high and low salaries. A weighted average takes into account the distribution ("weight") of how often a figure appears. Unless a weighted average was used, one would attach the same equal importance to a labour rate in a town with 30 labourers as a rate in a city with 3,000 workers; in this example the city with 3,000 workers has 100 times more weight. So for example, if the rate in the town with 30 employees is \$3.00 and the rate is \$4.00 in the city with 3,000, the simple average would be \$3.50, but if the weighting were taken into account, the weighted average would be $(30 \times \$3.00) + (3000 \times \$4.00) / 3030 = \$3.99$.

← MEDIAN (the one in the middle)
12 above him, 12 below



Similarly, one could look at the average rate within a bargaining unit. For the purposes of illustration, assume four (4) classifications in the unit: 1 tradesman at \$9.00 per hour; 2 mechanics at \$6.00; 3 truck drivers at \$5.00 and 4 labourers at \$4.00 per hour. The simple average wage rate in the unit would be \$6.00, however a weighted average which takes into account the distribution of people in each job

classification would yield a much more accurate reflection of the "average" rate. In this case the weighted average rate is \$5.30 calculated as follows:

$$(1 \times \$9) + (2 \times \$6) + (3 \times \$5) + (4 \times \$4) = \$52/10 = \$5.20$$

(3) The median - is perhaps the most meaningful type of average because it is the mid-point in a numerical series, that is half the series is above and half is below this point. For example, if the median average salary in a bargaining unit is \$5.00 per hour, it means that half the people earn more than this amount and half earn less. When analyzing wage data (but not necessarily other types of statistical data) the median average will tend to be below the arithmetic average because the arithmetic average will tend to reflect the middle income salaries because of the equal weighting while the median average will reflect the mid-point in the salary grid which will be lower because there are more people in the lower salary ranges.

(4) The mode - is the number which occurs most frequently in a series. So remember the type of average used must be identified because each has a different meaning. When you read an announcement by an Employer that the average pay of its employees is so much, the figure may mean something and it may not. If the average is a median, you can learn something significant from it: half the employees make more than that; half make less. But if it is a mean (which it may very well be if its nature is unspecified) you may be getting nothing more revealing than the average of one \$90,000 income--the boss's--and the salaries of a group of underpaid workers. "Average annual salary of \$11,400" may conceal both the \$4,000 salaries and the owner's profits taken in the form of a whopping salary.

Averages can be used to hide corporate profits as well. For example, a newspaper a number of years ago reported Standard Oils (now Exxon's) record-breaking revenue and net profit of a million dollars a day in the following terms: "Possibly the directors may be thinking . . . of splitting the stock, for there may be a publicity advantage. . . if the profits per share do not look so large. . .". If profits were \$100 per share, after a 2 for 1 split, they would be recorded at \$50 per share.

WORK SHEET AND PROBLEM SET ON AVERAGES

In order to understand the difference between the four (4) different types of averages and the concepts behind them, let's work out a problem set.

Example and Information

There is a bargaining unit with a total of 100 people in three (3) job classifications with the following negotiated rates of pay:

<u># of People in Classification</u>		<u>Wage Rate</u>
20	Classification III	\$7.00
30	Classification II	\$6.00
<u>50</u>	Classification I	\$4.00

Total in
Bargaining Unit-100

Questions:

Read the following questions, do the calculations and fill-in the blanks:

1. The simple or arithmetic average is the addition or summation of all the items (observations) in a numerical series, each item having an equal weight, divided by the total number of items (observations) in the series. Therefore, using the information above the simple average wage rate in the bargaining unit is:

= \$ _____
simple average rate

2. A weighted average takes into account the distribution or weight of how often an item (or observation) appears in a series. Thus, a weighted average wage rate is the summation of the number of people in each job classification times the wage rate in that classification plus the number of people in another classification times the wage rate divided by the total number of people in all classifications. Generally a weighted average can be computed by: $(\$A/\text{hr.} \times \# \text{ people in classification C}) + (\$B/\text{hr} \times \# \text{ people in classification D}) + \text{etc.} = \text{Total } \$ / \text{Total } \# \text{ of people.}$

Based on the information above the weighted average wage rate in the bargaining unit is:

= \$ _____
weighted average wage
rate

3. The median average is that figure (or wage rate) associated with the mid-point (half above and below) the total number of observations (or people) in a series. Therefore, based on the information above:

(a) The total number of people in the bargaining unit is _____.

(b) The mid-point of this series therefore is _____

(c) Therefore, the median average wage which is associated with this mid-point is \$ _____

4. The mode is the number which occurs most frequently in a series. Based on the information supplied:

(a) The job classification which has the largest number of people in it is _____

(b) How many people are in this job classification _____

(c) Therefore the mode (average) wage rate associated with this job classification is \$ _____

5. Based on your calculations is the weighted average higher or lower than the simple average?

Simple Average: \$ _____

Weighted Average: \$ _____

Answer: _____

6. Based on your calculations is median average higher or lower than the simple (arithmetic) average?

Median Average: \$ _____

Simple Average: \$ _____

Answer: _____

TURN PAGE UPSIDE DOWN FOR ANSWERS

ANSWERS TO PROBLEM SET

1. Simple average is \$5.66. Calculated as follows:
 $\$7.00 + \$6.00 + \$4.00 = \$17.00 / 3 = \$5.66$ simple average

2. Weighted average is \$5.20. Calculated as follows:
 $(\$7.00 \times 20 \text{ people}) + (\$6.00 \times 30 \text{ people}) + (\$4.00 \times 50 \text{ people}) =$
 $\$520 / 100 \text{ people} = \5.20 weighted average.

3. (a) 100 people
 (b) 50 people
 (c) \$4.00

4. (a) Classification I
 (b) 50 people
 (c) \$4.00

5. Lower

6. Lower

THE OLD SHIFTING BASE YEAR TRICK

The use of the shifting base trick is the mark of a real professional manipulator. Shifting the base in an arithmetic calculation has the effect of changing the percentage increase up or down depending on whether the base was higher or lower than the figure it was compared with. The shifting base gimmick is most often encountered in the form of the shifting base year. The shifting base year trick takes two common variations: (1) The simple arithmetic notion that the lower the base figure a number is compared with, the higher the resultant percentage increase; the opposite is true as well, the higher the base figure, the lower the percentage increase; (2) the selective and deliberate choosing of two benchmark periods for comparison so as to demonstrate what you want to prove.

Among the most common abuses of this technique are long term measurements in the Consumer Price Index (CPI) or productivity calculations. Examples: An Employer, to show how well his employees have done might compare the average annual rate of inflation over a long period of time with wage increases. By increasing the number of years in this average annual calculation, he will smooth out, that is lower the rate of inflation because the divider in the calculation was large, reflecting the high number of years over the long term.

A recent classic abuse of the selective shifting base year technique is the AIB's productivity figure of 2% per year. This is an average annual figure using a 1954 base year. That's fine except that 1954 is just about the worst conceivable year to choose for a productivity measurement unless the AIB wanted to prove that productivity was low in order to justify low wage increases. If they had used 1961 as the base year in their calculation, as does Statistics Canada, it would have shown an average annual increase in productivity of 4.3%, not 2%. The recent AIB ads referred to earlier are another example of using different benchmark-base periods to get the effect they wanted.

CONFUSING PERCENTAGE INCREASE AND POINTS

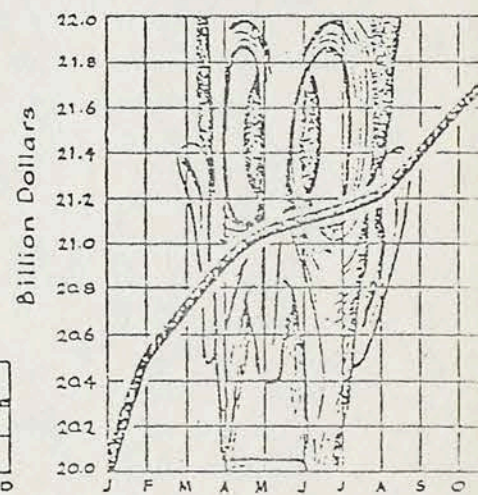
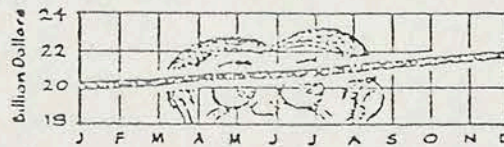
This is amateur stuff. Two examples will make the point clear. Examples: The All-Items Canada-wide Consumer Price Index stood at 193.5 points in January 1976 and at 201.1 points in September.

This represents an arithmetic increase of 7.6 points or an increase of 3.9 percent.
 $(201.1 - 193.5 = 7.6 \text{ points} / 193.5 \text{ points} = 3.9\%)$

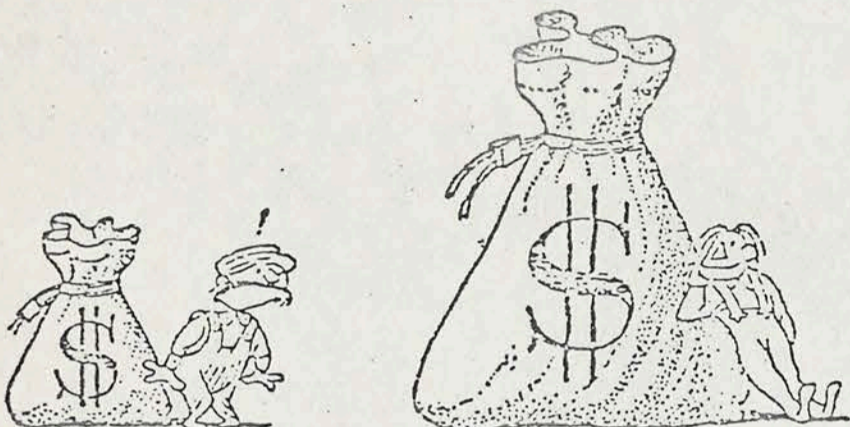
Another example - in one year of a back-loaded contract, wages went up by 6%; in the second year of the agreement wages went up by 12%. This represents a 6% point increase or a 100 percent year over year increase.

GEE-WHIZ GRAPHS

Graphs are pictures used to represent statistical data and usually take the form of line, bar or pictorial graphs. Graphs are often abused to misrepresent the accuracy of statistical material by: conveniently omitting the identity of what is being measured; truncation of the graph, that is cutting off the lower half of the graph which has the visual effect on a line graph of increasing the rate of climb (slope) of a curve which is meant to impress you or very commonly by altering the proportion (ratio) of the vertical and horizontal units of measure on the graph. This has the effect of making a small change into a large and impressive change. The following two (2) graphs for example, using the same data, represent the same growth in national income. Which is more impressive?



In a bar or pictorial graph the most common gimmick is to change the proportions of the graph to distort the amount of volume actually represented, thus giving a misleading visual impression to the reader. This is usually done by changing the width of a bar or pictorial graph, even if the length is correct, as was done in the recent AIB ads. For example, the pictorial graph below is meant to represent a 2 to 1 ratio, but the visual effect is four to one.



GUESTIMATION AND EXTRAPOLATION

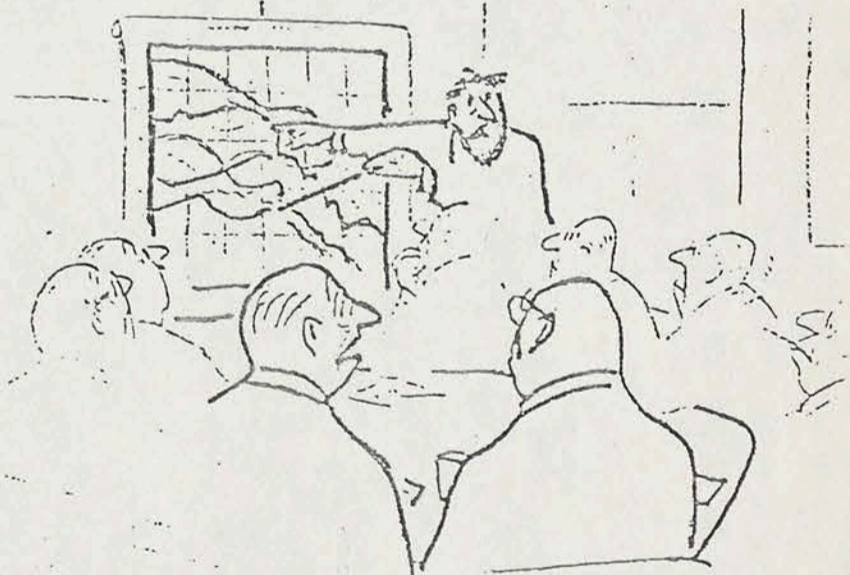
Extrapolation is an attempt to statistically project or forecast future trends. The cynics among us call it "guestimation", economists call it making a living. While the trend up to the present may be a fact, the future trend represents no more than an educated guess. Implicit in forecasting or extrapolation is "everything else being equal" and "present trends continuing". Extrapolations or projections are abused often in statistical presentations because they are based on incomplete information or because there is an assumption based on an irrelevant or phoney (spurious) relationship between two events.

The most dangerous type of extrapolation is "straight-line" or mechanical projection, that is the mechanical projection of trends or numbers. For example, Gross National Product (GNP) went up x% this year, therefore next year it will go up by the same percentage. Example: The average per capita income for Canadians is \$9,000 per year and the average family has four (4) people, therefore, the average Canadian family's income is \$36,000.

Right? Wrong--the wife and 2 children don't work, so the average family income is still only \$9,000. (You should have also asked whether the "average" was arithmetic, the median or the mode).

CHICKEN AND EGG - CAUSE AND EFFECT

The relationship between events is one of the most difficult and important areas of statistical analysis. That is, what is the relationship between cause and effect? What is the direction of causality between two events? Does in fact A have any relationship with B? Does A cause B or does B cause A? Do high wages or high profits cause inflation--what is the interrelationship? Or as one wit once remarked: "proper treatment will cure a cold in seven (7) days, but left to itself, a cold will hang on for a week". It can not be emphasized too strongly that just because there is a statistical relationship between two events (called a correlation) says absolutely nothing about the causality or the direction of causality between them. A statistical relationship between two occurrences without establishing or identifying any causal relationship between them is a meaningless or spurious (false) relationship. As someone remarked "If you can't prove what you want to prove use something else and pretend that they are the same thing."



"McBelding certainly has a gift for making cold statistics come to life."

One of the most crucial elements in any social or economic analysis is the ability to isolate variables or factors and identify the causal relationship(s) and the direction of causality. One of the most serious errors is the lumping together of different causal factors. For example, what causes inflation? Only by identifying and isolating different factors can it be determined whether an event

was caused by one (monocausation) or by many factors (multi-causation). One must be careful in terms of generalizing from a specific case to the general (is it representative?); similarly, one must guard against, without careful qualification, going from the general to the specific (mechanical extrapolation).

Perhaps the best advice when dealing with statistical data at the bargaining table is to analyze it carefully, placing it in its proper context and looking for conscious and unconscious biases and not to make statements which go beyond the empirical evidence.

We hope you have found this guide useful. Understanding the use, misuse and abuse of statistical data should help to strengthen your position at the bargaining table and make reading the daily newspaper or employer financial statements a more interesting and challenging experience.

GUIDE TO THE USE OF SALAD CONTRACT ANALYSIS SERIES

INTRODUCTION:

SALAD (an acronym for System for the Analysis of Labour Agreement Data) is a computer data base system which stores, retrieves, and analyzes collective agreement provisions. It was developed by CUPE in 1976 to meet the growing demand for timely and easily-understood reports regarding the provisions existing in agreements within CUPE's jurisdiction.

The SALAD Contract Analysis Series consists of a proposed group of approximately thirty surveys which will be issued and updated on a regular basis. Examples of such surveys are "Major Canadian School Board Agreements" and "New Brunswick Municipal Agreements". Each survey contains information on all the collective agreements in that jurisdiction that the Research Department has been able to obtain, not just CUPE's own agreements.

The system presently stores information regarding approximately 120 non-wage provisions as well as virtually all the wage rates within collective agreements. Surveys will rarely include all 120 provisions however. This is done for two reasons--first, to avoid printing tables where all agreements are listed as having "No Provision" and secondly, to reduce the bulk of surveys which are often 400 or more pages.

Every survey consists of three different types of tables. It is very important that users of the surveys understand how to read these tables and how to use them to the Union's best advantage. For this reason, the structure and functions of each of the three types of tables is outlined below.

Aggregate Tables (Exhibit A)

The "aggregate" or "statistical" tables are frequency distributions of the level of each provision by occupational group. They are useful in showing at a glance what are the most common levels of the provision in each occupational group and for the survey group as a whole. Only the levels which are actually found in the agreements surveyed are listed--for example, in Exhibit A there were no agreements which had four weeks' vacation after 6 or 7 years, so these levels are not listed on the left hand side.

Each of the columns 1 - 4 represents an occupational group--i.e., production, office, technical or professional. Provisions are analyzed by occupational group because frequently one collective agreement contains different provisions for each group when it covers more than one group. A common example of this would be an agreement which has a 40-hour week for the "production" (manual) group and a 35 hour week for the office group. By breaking down each provision according to occupational group, it enables us to make statements such as "15,000 out of a total of about 16,500 office employees receive four weeks' vacation after 10 years or less".

Columns 5 and 6 represent the totals of each provision found--column 5 in terms of agreements and column 6 in terms of employees. Both contain totals in absolute numbers and percentages. The total number of agreements (column 5) will not usually be an accurate reflection of the actual number of agreements in the survey. This is due to the fact that if there is more than one group covered by a collective agreement, each group is counted as an "agreement".

.../2

Users should note that the percentages for each level of provision often markedly differ for "agreement" totals and "employee" totals. For example, in Exhibit A, columns 5 and 6, only 3 agreements (3.5%) receive 4 weeks vacation after 5 years service, but 20,000 employees (46.1%) are covered by this provision. Obviously, it would be to the Union's advantage in a case like this to emphasize the number of employees who receive four weeks vacation after 5 years service rather than the number of agreements which contain such a provision.

Survey Tables (Exhibit B)

The "Survey" tables are lists of the actual provisions existing in each collective agreement. Again, if there are different occupational groups within a single collective agreement involved, the provision applying to each group is indicated (see Quebec RCSSB--production, office and technical group).

These tables enable the Union to point to specific agreements which have provisions which support their demands. For example, if the Union's demand was for 3 weeks vacation after 1 year, it could point to the Peel County School Board agreement in support of this proposal. If it was also demanding 4 weeks vacation after 10 years, it could point to the Peel County, Dufferin-Peel RCSSB, Lincoln County, Niagara South, Sudbury and Lakehead RCSSB School Boards, as well as the Quebec RCSSB to support its proposal.

In certain cases there is a need to provide supplementary information in addition to what is listed in the table. This usually occurs where the provision changes during the life of the agreement, or where the provision is too complex to adequately represent by a computer code for use in the table. In these situations, "footnotes" are created and printed at the bottom of the page. In Exhibit B, for example, there is a footnote (number 2) pertaining to the Quebec RCSSB agreement, due to the fact that the provision changes over the life of the agreement.

Wage Tables (Exhibit C)

The wage tables are lists of wage rates by employer, with a separate table for each job title. In the example, Exhibit C, the table lists all the agreements in the survey which contain the job title "Accountant". Agreements which do not contain that job title do not appear in the table.

Column 1 in the table indicates the "Level" of the job. This is to handle situations in which a job title has more than one level--for example, Accountant I, Accountant II and Accountant III.

Column 2 indicates the number of months of service required for employees in that job category to progress from the minimum rate to the maximum rate for the job.

Column 3 indicates the unit in which the wages are expressed in the collective agreement--e.g. \$ per hour, \$ per month, \$ per room per month, etc. The program is capable of converting these differing units into a common unit. Where this is done (not in Exhibit C) the wage unit column (column 3) will be blank and the common wage unit will be indicated at the top of the page.

Columns 4, 5 and 6 show the minimum and maximum rates on up to three different dates. In Exhibit C the dates are 27/12/75 (December 27, 1975), 31/12/76 (December 31, 1976) and 30/06/77 (June 30, 1977). The dates are chosen for each survey so as to include as many rates as possible on each date.

Since the commencement date of some agreements is later than the first date on which wages are indicated (column 4), blanks will appear frequently in the first column of wages. In Exhibit C, the commencement date of the Ottawa and the Borough of York agreements is January 1, 1976, so no wages for those agreements are shown under the December 27, 1975 column. Also, where agreements expire prior to one of the dates on which wages are shown, blanks will be printed. In Exhibit C, the N.B. School Boards agreement expires prior to December 31, 1976 and all but the Ottawa agreement expire prior to June 30, 1977.

As was the case with the Survey table, footnotes are used on the Wage tables to add relevant supplementary information in addition to the wage rates which are shown. In Exhibit C, the Victoria SD #61 agreement has a footnote which indicates that the wage rates shown will be increased in 1976 due to a COLA clause.

Conclusion

We hope that this brief outline of a SALAD series survey will serve to make the information reasonably comprehensible to our members and staff. However, we do recognize that it is virtually impossible to adequately explain material such as this on paper, and therefore Research Department staff will be continually amplifying and expanding on this guide verbally at conferences, staff meetings and other such gatherings.

We welcome any comments, questions or suggestions you might have regarding the SALAD contract analysis series, and hope that you will find the information to be useful for your purposes.

Research Department,
Canadian Union of Public Employees,
November, 1976

EXHIBIT A

N - 2 MAJOR CANADIAN SCHOOL BOARD AGREEMENTS

① ② ③ ④ ⑤ ⑥

FOUR WEEKS VACATION	PRODUCTION		OFFICE		TECHNICAL		PROFESSIONAL		AGREEMENTS		TOTAL	
	AGTS	EMPLS	AGTS	EMPLS	AGTS	EMPLS	AGTS	EMPLS	#	%	#	%
NO PROVISION			1	70					1	1.2	70	.2
5 YR(S)	1	7000	1	11000	1	2000			3	3.5	20000	46.1
8 YR(S)	3	849	1	252					4	4.7	1101	2.5
9 YR(S)	1	194	1	210					2	2.3	404	.9
10 YR(S)	21	8115	11	3349	1	50			33	38.4	11514	26.5
11 YR(S)	3	541							3	3.5	541	1.2
12 YR(S)	3	693	3	451					6	7.0	1144	2.6
13 YR(S)	17	5570	4	1094	3	141	1	20	25	29.1	6825	15.7
14 YR(S)	4	1077							4	4.7	1077	2.5
15 YR(S)	1	464	2	93					3	3.5	557	1.3
20 YR(S)	2	156							2	2.3	156	.4
TOTAL	56	24659	24	16519	5	2191	1	20	86	100.0	43389	100.0

EXHIBIT B

N - 2 MAJOR CANADIAN SCHOOL BOARD AGREEMENTS

EMPLOYER NAME	OCCUPATIONAL COVERAGE	THREE WEEKS VACATION	FOUR WEEKS VACATION
PEEL CTY SB	OFFICE	1 YR(S)	10 YR(S)
DUFFERIN-PEEL RCSSB	PRODUCTION	3 YR(S)	12 YR(S)
DUFFERIN-PEEL RCSSB	OFFICE	2 YR(S)	10 YR(S)
LINCOLN CTY SB	PRODUCTION	3 YR(S)	10 YR(S)
LINCOLN CTY SB	OFFICE	3 YR(S)	10 YR(S)
LINCOLN CTY RCSSB	PRODUCTION	3 YR(S)	11 YR(S)
NIAGARA SOUTH SB	PRODUCTION	3 YR(S)	10 YR(S)
WATERLOO SB	PRODUCTION	4 YR(S)	12 YR(S)
WATERLOO CTY SB	OFFICE	4 YR(S)	12 YR(S)
WATERLOO CTY RCSSB	PRODUCTION	5 YR(S)	13 YR(S)
SUDBURY SB	PRODUCTION	4 YR(S)	10 YR(S)
LAKEHEAD SB	PRODUCTION	4 YR(S)	13 YR(S)
LAKEHEAD SB	OFFICE	4 YR(S)	12 YR(S)
LAKEHEAD RCSSB	PRODUCTION	3 YR(S)	10 YR(S)
LAKEHEAD RCSSB	OFFICE	5 YR(S)	15 YR(S)
QUEBEC			
QUEBEC RCSSB	PRODUCTION	2 YR(S)	5 YR(S) (2)
	OFFICE	2 YR(S)	5 YR(S) (2)
	TECHNICAL	2 YR(S)	5 YR(S) (2)

(2) EFFECTIVE JUNE 30/77 - 4 WEEKS AFTER 3 YRS
 EFFECTIVE JUNE 30/76 - 4 WEEKS AFTER 1 YEAR

EXHIBIT C

N - 2 MAJOR CANADIAN SCHOOL BOARD AGREEMENTS

ACCOUNTANT

EMPLOYER NAME	LEVEL	MONTHS TO MAX	WAGE UNIT	27/12/75		31/12/76		30/06/77	
				MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
VICTORIA SD #61	1	36	\$/HOUR	8.12	9.41	8.61	9.98	-	(1)
OTTAWA SB	1	36	\$/YEAR	-	-	8382.00	9610.00	9011.00	10331.00
	2	36	\$/YEAR	-	-	9329.00	10943.00	10029.00	11764.00
	3	36	\$/YEAR	-	-	10948.00	12561.00	11769.00	13503.00
BOROUGH OF YORK SB	1	36	\$/YEAR	-	-	15239.00	18180.00	-	-
SB SCHOOL BOARDS - STENO.	1	24	\$/MONTH	754.00	809.00	-	-	-	-
	2	24	\$/MONTH	840.00	908.00	-	-	-	-
	3	24	\$/MONTH	944.00	1021.00	-	-	-	-
ST. JOHN'S RCSSB	1	0	\$/YEAR	15291.00	15291.00	15291.00	15291.00	-	-

(1) PLUS COLA IN 1976

COLLECTIVE BARGAINING TRENDS

NEW EMPLOYER TACTIC

A new tactic has been added to the anti-labour roll-back, cut-back campaign. Demanding that workers pay for new cost reduction programmes, employers are trying to take back previously negotiated, hard-won contractual rights and benefits.

- An extension in the probationary period from 3 months to one year.

In all, MIPEA proposed over 100 negative amendments to the collective agreements.

CUPE'S EXPERIENCE IN B.C.

CUPE's first experience with this management tactic occurred last spring in the form of an anti-union crusade by the Mid-Island Public Employers Association (MIPEA), an accredited employers' group in Nanaimo, British Columbia. Six hundred (600) members of CUPE-municipal, school board and college employees-were forced into a 10-week strike-lockout merely to defend their old contracts and negotiate a few modest improvements.

According to MIPEA's chief negotiator, Mr. Ken Waldron, "The decision to form MIPEA was predicated on the conviction that the greater Nanaimo area employers could and should establish their independence as pattern setters in the establishment of rates and conditions of employment for public employees."

When the Union accused the employer of engaging in a reckless, reactionary program, Waldron's response was "Reactionary, yes. Reckless, no."

MIPEA, among other things, demanded the following changes and reductions to the articles in the old contracts:

After a seven-week Industrial Inquiry Commission, the longest such hearing in CUPE's history--which the union estimates will cost B.C. taxpayers in excess of \$60,000--the CUPE members were able to preserve their old contracts. But the pattern which MIPEA wanted so much to promote is surfacing in other contexts.

- The removal of seniority in determining promotions and transfers.
- A decrease in the number of statutory holidays.
- The elimination of a 4 hour minimum reporting pay.
- The elimination of overtime premiums by extending the normal hours of work.
- A cut-back to the prior notice of lay-off period from 30 days to 10 days, or 24 hours in the case of a labour dispute.
- An increase from 3 months to one year in the term of service before receiving sick leave.
- A reduction to the length of maternity leave.

TACTICS USED IN OTHER PROVINCES

Recently, school board employees in New Brunswick and construction workers in Quebec have faced the same tactic. In New Brunswick, the provincial Treasury Board is requesting the forfeiture of a union shop provision, the elimination of sick leave usage on maternity leave, elimination of job classifications and a longer waiting period before receiving 4 weeks vacation. In Quebec, construction workers recently struck against the Province's Association of Building Contractors which wants to reduce the role of on-site shop stewards, do away with union controlled hiring halls, and "declassify" skilled labour to reduce the wages of skilled tradesmen.

It now appears that the large private corporations are prepared to follow the same course. While profits for the auto companies have been soaring, in their current round of negotiations with the United Auto Workers, company negotiators are trying to put "cost-cuts" into the language of the new collective agreements.

From management's perspective, Trudeau's wage control program, the cut-backs to social services and the lingering economic crisis, have all created an atmosphere conducive to increased management militancy. Defending the MIPEA position in Nanaimo, Mr. Waldron asserted that "Collective bargaining means negotiating in good faith. It doesn't mean improving the living and working conditions of workers." We can all expect more of this "good faith" negotiating in the future.

Source: Labour Research, No. 1, CUPE Research Department, October, 1976.