

## QUANTIFICATION AND SUBJECTIVITY IN THE WORKPLACE

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### PROLOGUE: FOUNDATION MODELS

This paper is about how we deal with subjective aspects of the workplace such as a manager's satisfaction with a subordinate's performance or capability, or decisions about the value of a new role, or the value to the company of one of its products. In particular, I will explore how we misuse mathematics in attempt to appear objective and thus generate clumsy decision-making systems that irritate the employees involved who then do their level best to undermine the systems. The paper's intention is to raise the level of discussion regarding the foundations of our decision-making processes.

### THE PROBLEM

On any given day in any of hundreds of workplaces across North America, committees meet to determine the size of a role expressed as the place of the role in the organization's hierarchy, the title of the person in the role, and the compensation for it. Committee members rate the job on a number of factors, add up the ratings, and compare their totals with each other. But before using that total to make decisions about the role, they check to see if the number feels right, whether it agrees with the judgment they have already made about how high the role would have to be rated to attract a person capable for it. If the total gives the role a position, title or salary that feels too low or too high, the committee members go back to their original ratings and alter them so that the total yields a result that feels right. For all of the time it takes to gather the committee, fill out the forms and total the ratings and for all of the money paid for the proprietary technology, the decision is really based on the judgment of the raters.

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<sup>1</sup> Thanks to Paul McDowell for his comments on this paper.

In any large North American corporation you will find numerous cumbersome “measurement”<sup>2</sup> systems like this that have little credibility and that most employees try to avoid, subvert, or work around: performance appraisal systems, the Hay system for sizing of roles, and methods to “measure” the return on investment of training programs. While everyone complains about them, these systems keep being reinvented. This paper addresses four questions.

1. Why do these systems not accomplish what they purport to?
2. Why do we repeatedly introduce such systems into the workplace when we find them so distasteful and dysfunctional?
3. What is a better method for addressing the issues such systems address so poorly?
4. What is the cost of the current approach?

The core of the topic is subjectivity, and in particular, the psychology and the mathematics of subjectivity. My thesis is that:

1. We are nervous about putting forth our judgments in the workplace and using those judgments as the justification for decisions. We fear that our judgments – and therefore we – will be judged unacceptable.
2. We therefore want to treat as objective that which is inherently subjective.
3. We therefore quantify the inherently subjective using mathematical tools appropriate only for the truly objective.
4. This causes problems. At a minimum:
  - The cumbersome forms bring delay and discredit whoever put the forms out.
  - Worse, we have muddled conversations in which we discuss everything except what we need to discuss.
  - We do not put in place the systems required to handle the subjective aspects of the workplace.

Frequently, also, we make bad decisions and the wrong person gets blamed when things go wrong. (Frequently, not always, because employees will on occasion exercise judgment and bypass dysfunctional systems.)

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<sup>2</sup>Quotation marks are used in this paper in two instances:

- for reference to a word itself as vs. using the word, e.g. referring to the words “theoretical” and “philosophical” to describe how those words are used
- as shorthand for “so-called” e.g. “measurement system”, meaning “something called a ‘measurement system’ that does not entail measurement”.

# 1. WHY THESE SYSTEMS DO NOT ACCOMPLISH WHAT THEY PURPORT TO

## TAXONOMY, THE OBJECTIVE AND SUBJECTIVE, AND NUMBERS

We must start by becoming clear about what it is we attach numbers to, and we will use a taxonomy of entities, properties and attributes for this purpose. (See Jaques 1982.) We will explore which of those are subjective and which objective, and how we would appropriately use numbers to quantify them. (This is summarized in Figure 1.) In this process, we will also clarify the difference between the objective and the subjective.

### ENTITIES

The world presented to our sense is continuous in space and time. We begin to make sense of the world by carving off pieces of it and drawing boundaries around them. The result is **entities**. There are several types of entities including things, events and concepts.

Different cultures and different persons may entify differently, that is, they may draw boundaries differently, resulting in different categories of entities; what you call a rug may be different from what I call a rug. But it is always possible for us to communicate with each other and for each of us to understand how the other applies the concept; I can come to understand that what I call a "bath mat, not a rug" you consider to be a rug.

Once we are clear about what is considered to be a rug we may wish to determine how many rugs there are in a pile. We quantify entities by **counting** them (Jaques 1982), and the number of rugs in the pile is an objective fact. The word "objective" is not meant to refer to an ultimate reality but to shareability within the species. That is, any capable adult human being who knows what I mean by "rug" will count the same number of rugs in the pile that I do. Regardless of your culture or background, if I count 21 rugs in the pile of rugs and you count 20, at least one of us is wrong. Because the number of rugs is an objective fact, there is a right answer.

When we count entities, the numbers we use are non-negative integers, i.e. whole numbers equal to or greater than 0. "0" means there are no rugs in the pile. There cannot be a negative number of rugs in a pile. Important to our discussion, we can meaningfully do arithmetic with those numbers:

- Add a pile of 3 rugs to a pile of 4 rugs and you have a pile of 7 rugs.  $3 + 4 = 7$
- Subtract 2 rugs from a pile of 7 rugs and 5 rugs remain.  $7 - 2 = 5$
- Make 4 piles of 5 rugs each and you have 20 rugs.  $4 \times 5 = 20$
- Separate a pile of 9 rugs into 3 equal piles and you have 3 piles of 3 rugs.  $9/3 = 3$

## PROPERTIES

Entities have objective **properties**, such as length, width, mass etc., and these properties can be **measured**. We can, for example, measure the length of a rug. We say that the length is objective because if I measure the rug's length as 2 metres and you measure it as 2.3 metres, at least one of us is wrong. Any capable adult human will get the same result when measuring the length of the rug.

When we measure properties, the numbers we use are non-negative real numbers which are on a ratio scale. "Non-negative" means any number equal to or greater than 0. A rug cannot be  $-2$  metres long, and a length of 0 means there is no rug. "Ratio scale" means we can meaningfully divide the numbers; a rug that is 1.5 metres long is half the length of one that is 3 metres long. So we can meaningfully do arithmetic with those numbers:

- Add 1 metre to the length of a 2-metre-long rug and you get a rug 3 metres long.  $2 + 1 = 3$
- Subtract 1 metre from a 3-metre rug and you get a rug 2 metres long.  $3 - 1 = 2$
- Triple the length of a 2-metre rug and you get one 6 metres long.  $2 + 2 + 2 = 6$
- Divide a 3-metre-long rug in half, finish the cut edges and you get two rugs each 1.5 metres long.  $3/2 = 1.5$ .

Measuring also comes into play when we deal with substances such as flour, water, copper, etc. By measuring out a litre of sugar or a kilogram of copper, we essentially carve out an entity that is of the required volume or mass.

## ATTRIBUTES

An attribute is a way that we value an entity treated as though it were an aspect of the entity itself. This is what we mean when we say, "Beauty is in the eye of the beholder." To say, "This rug is beautiful" sounds like a comment about the rug but is really a comment about our experience of the rug. A more descriptive sentence would be, "I experience beauty when I look at this rug." As an attribute, beauty is subjective. I can find the rug beautiful while you find it ugly.

We not only find rugs beautiful, but we also find one rug more beautiful than another. For this reason, we often find it useful to use rating scales to indicate the order of entities according to which we value the most. Thus, a rug I rated at 8 on a 10-point scale is one I consider more beautiful than one I rate at 4 on that scale. What is significant about the numbers is simply that each is greater than the one before. Rating the beauty of the rugs on a scale of 1 to 10 gives us no more information than rating them on a scale of A to J where a rug rated at H would be more beautiful than one rated at D. The numbers are on an “ordinal scale”, meaning that the only information the numbers give is on the order of the rugs from least to most beautiful.

We sometimes use negative numbers, too. We might use a scale of -10 to +10 going from very ugly at -10 to very beautiful at +10. In this case, 0 indicates neutrality, neither ugly nor beautiful, no beauty rather than no rug.

What can we do with these numbers?

- A rug you rate at 8 is one you consider more beautiful than one you rate at 6, and the one you rate at 6 you consider more beautiful than one you rate at 4, so we know that you consider the one you rate at 8 to be more beautiful than the one you rate at 4. This property of ordinal-scale ratings is called “transitivity”.
- We can construct a bar chart showing how many rugs you rated at 1, how many you rated at 2, how many you rated at 3, etc.
- We **cannot** do arithmetic with those numbers. We cannot add the rating of 8 to the rating of 4 to get 12 any more than we can add H to D to get a sum of L. And we cannot average the 8 and the 4 to get a mean of 6 anymore than we can average H and D to get a mean of F. We can go through the motions that look like doing arithmetic, but they do not carry the meaning that arithmetic does.

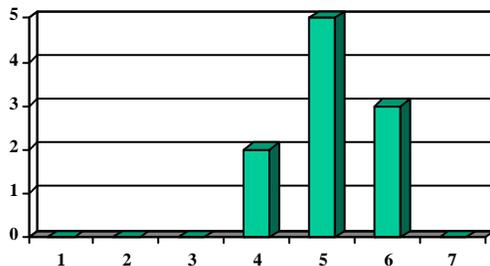
This last point may seem subtle, a nicety of interest only to mathematicians. But I want to make the mathematical point clear here because it is routinely ignored in workplace systems and it has serious implications for business and ethics that I will describe later. Arithmetic is not an arbitrary set of conventions. When we say “ $2 + 3 = 5$ ”, we are not simply looking at an addition matrix (Appendix), going along the row for 2 until we reach the column for 3 and finding 5 as the entry. In true addition, we are representing concrete physical actions. Put two rugs on top of 3 rugs and you have a pile of 5 rugs. Add 2 metres to the length of a 3-metre-long rug and you have a 5-metre-long rug. Let’s see why true addition of attribute ratings is not possible. We will examine two common ways in which people in the workplace act as though they can do arithmetic with ordinal scale numbers: purporting to average ratings and purporting to make the whole the sum of its parts.

FIGURE 1					
TAXONOMIC CATEGORY	SUBJECTIVE/ OBJECTIVE	HOW QUANTIFIED	TYPE OF NUMBER	MEANING OF 0	MATHEMATICAL OPERATIONS
Entity	Objective	Counting	Integer $\geq 0$	No entity	Arithmetic
Property		Measuring	Ratio scale $\geq 0$		
Attribute	Subjective	Rating	Ordinal	Neutral	Bar charts, transitivity

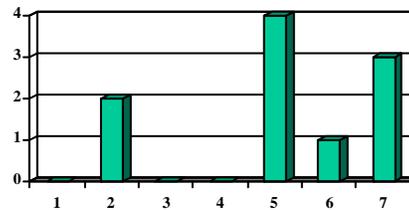
### Purporting to Average Ratings

The most common application of pseudo-averaging of ratings is in surveys of employee satisfaction or customer satisfaction. Let's take a simple case of a department of 10 people rating their overall satisfaction on a 7-point scale. The charts in Figure 2 below show results of such a survey in two successive years.

Figure 2



Year 1:  
Reported average 5.1



Year 2:  
Reported average 5.1

The numbers associated with each scenario are the "weighted averages" of the ratings. The first point I wish to make is that these "weighted averages" are, literally, nonsense. That is, the numbers make no sense. We can see that in two ways.

- The numerical operations used to calculate the "average" do not represent any real activity. There is no way to add Sandy's rating of 4 to Mary's rating of 5 to get a summed rating of 9. There is no way to divide a "sum" like that into two equal pieces to get an average rating of 4.5.

- The only information contained in the rating numbers is ordinal. We know that a rating of 7 is higher than a rating of 6. We may even know that employees who rate their satisfaction at 1 or 2 typically are looking for work elsewhere and that those rating their satisfaction at 6 or 7 tend to stay even if offered jobs elsewhere. But it makes no sense to say that a rating of 7 is greater than a rating of 6 by 1 because there is no unit of measure. In this regard, the numbers 1 – 7 have no more information than the letters A – G if those letters are used to indicate higher ratings by letters later in the alphabet. We could create a matrix of letters (Appendix) in which the intersection of the row for D with the column for E is a cell with the letter I, but we would not be inclined to call that addition. Putting the ordinal number 4 with the ordinal number 5 to get the number 9 is no closer to addition than that.

You may recall learning in high school that the word “average” has three mathematical meanings:

- The **mode** is the most common in a set of possibilities. The mode can be found for any set of categories. In our example, the mode is 5 in both years because more employees chose 5 than any other number.
- The **median** is the middle amount. Any ordered set has a median. In our example, the median is 5 in both years; if you lined up all employees from least to most satisfied, the employee in the middle would have rated their satisfaction at 5.
- The **mean** is the weighted average. Only numbers on equal-interval scales have means. That is, we must be able to say that the difference between 5 and 4 is the same as the difference between 6 and 5. The ordinal scales in our example are not equal interval, so a mean cannot be calculated.

That ordinal numbers do not have means does not stop managers and consultants from going through the motions of calculating them – even those managers and consultants who passed their statistics courses in university and learned there that ordinal numbers do not allow arithmetic. We still see reports claiming that customer satisfaction has risen from an average of 6.2 to an average of 7.1 on a 10-point scale. We still see companies setting a target of employee satisfaction averaging 4.3 on a 5-point scale for each department. And managers’ bonuses and promotions may hang on such numbers.

We want to believe that an organization or a department in it has a property, employee satisfaction, that is the weighted average of the satisfaction levels of individual employees, the way the density (kilograms/cubic centimetre) of a hammer is the weighted average of the densities of the handle and of the head. But employee satisfaction of a department is an attribute. It is a way that a manager values that department when considering how likely employees are to leave the company, how willing they are to work overtime when needed, etc. and it is then treated as though it were an aspect of the department itself. In short, employee satisfaction of a department is a manager's satisfaction with how satisfied individual employees are. As such, it is a judgment on the part of that manager, perhaps informed by individual employees' ratings of their own satisfaction, but not an averaging of individual levels of satisfaction. But if the calculations do not produce a mean, might they not produce a number that is a useful indicator of the state of affairs? Might not the resulting number be used as an indication of whether employee satisfaction, for example, has improved?

Consider Figure 2 again. From Year 1 to Year 2 the department's "average" satisfaction rating has remained unchanged, but has the department's situation remained unchanged? In Year 2, the department has two employees whose satisfaction is at 2; if these are hard to replace employees who are now actively looking elsewhere, this might displease the manager. On the other hand, in Year 2 there are 4 employees in the 6-7 range (up one from Year 1), three of them at 7; it may be useful to the manager to be assured now of their loyalty.

When the bar charts represent lengths of boards, we can determine unequivocally whether the average length has increased with a simple calculation. When the bar charts represent ratings of employee satisfaction, the only cases in which we can unequivocally say that employee satisfaction has improved is when some individual scores increase and none decrease. In all other cases, we need to exercise judgment. The "average" does not tell us whether things have improved, stayed the same, or gotten worse except in such cases where the change (or lack of it) is already obvious.

### **Attempting to Make the Whole the Sum of its Parts**

Another common application of pseudo-arithmetic with ratings is in models that attempt to build the rating of an entity from ratings of constituent parts. The Hay system for evaluating a role is one such model. As I described earlier in this paper, members of committees rate various factors within a role and add their ratings to come up with a point-total that purportedly represents the value of the role as a whole. And no matter how Hay arranges its formula, the total of the points often does not represent the value of the role.

Another common model is in performance evaluation where a manager or committee rates an employee's performance on a number of factors and the "weighted sum" of those factor-ratings determines the employee's bonus. Of course, these models all entail use of arithmetic with ordinal numbers and as such are subject to the same critique as applies to averaging of ratings. The individual ratings cannot be weighted and there is nothing to add up. These models are also based on the assumption that the whole is equal to the sum of its parts, that one's satisfaction with an entity can be determined linearly from one's satisfaction with its components. This assumption is challenged by General System Theory.

## GENERAL SYSTEM THEORY

The physical sciences made huge advances since the time of Galileo by separating the object of study into component parts and analyzing those independently. To understand copper wire, study the copper atom; to understand the copper atom, study its nucleus and its electrons; to understand the nucleus, study its constituent particles. The most interesting aspects of copper are additive; join two copper wires end to end and you get a wire whose mass is the sum of the masses of the two original wires and whose length is the sum of their lengths.

Powerful as this approach has been for physics and chemistry, it can yield misleading results when applied to the life sciences including biology, psychology, sociology and economics. If you separate the heart from the rest of the organism by cutting off the blood supply, nerves, and all hormonal and electrical connections to the heart, what remains is a piece of meat. In living systems, each part must be understood to be interdependent with the other parts; a part can only be understood in the context of the whole. And the most interesting aspects of living systems, e.g. problem-solving ability, are not additive. Two people working together may be able to get less work done, the same work done, or more work done than they could working separately.

In the mid-twentieth century, Ludwig von Bertalanffy (1968), a biologist at the University of Alberta, formalized an approach to the life sciences calling it General System Theory. General System Theory is particularly concerned with interdependence and context dependence and how they lead to situations in which the whole of a system is not equal to the sum of its parts. I'll illustrate this first with the performance evaluation example raised above and then with a different quantification example, "calculating" the profit of a product.

### “Calculating” an Employee’s Performance

Many organizations use a periodic assessment of employees’ performance to determine bonuses. Often, the employee’s major accountabilities are listed, weighted by importance, and rated by how well the employee did on each<sup>3</sup>. The employee’s total performance is “calculated” as an average of the ratings. Figure 3 gives an example of an employee in a sales role.

<b>FIGURE 3</b>			
<b>Accountability</b>	<b>Importance</b>	<b>Rating</b>	<b>Weighted Rating</b>
Follow up on leads for new customers	15%	50%	.08
Develop new business from existing clients	45%	100%	.45
Oversee delivery of service to existing clients	40	100%	.40
<b>Total</b>	100%		<b>.93</b>

This employee loves working with existing clients and does an excellent job of it but has no interest in following up on leads. Is the weighted average of .93 reflective of the employee’s overall performance?

The sales role and its accountabilities operate within the context of an overall corporate strategy. That strategy may call for development of a certain number of new clients over a period of time, which may be related to plans for the development of a greater capacity in the Service Department. The salesperson’s accountability for following up on leads is also interdependent with the systems the organization has put in place to generate those leads and with marketing in general. If the salesperson does not follow up on the leads, the company may develop a reputation for not being responsive. If the salesperson does follow up on the leads, that enhances the company’s reputation and also may get more people talking about the company.

By falling down on part of the job, the salesperson has fallen down on the entire job. If the manager cannot count on the employee to do the entire job, they are unlikely to feel 93% satisfied with the employee. In fact, the employee seems unsuited for the role as it has been established. The manager’s satisfaction with the employee as a whole will not be the sum of the manager’s satisfactions with parts of the job.

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<sup>3</sup> The rating may be of the employee’s output or of their effectiveness in working towards the output. This distinction is critical to good management but irrelevant to this discussion.

### **“Calculating” the “Profit of a Product”**

Decisions about products – and about managers accountable for those products – are often based on “calculations” of the “product’s profitability”. Usually, such calculations entail arithmetic operations concerning sales of the product and related costs. But a simple example will show the futility of such exercises.

It is commonplace to consider the most profitable product in movie theatres to be popcorn (Jaques 1997). A low-cost commodity is processed in a low-tech machine in a small area by minimum wage employees and sold at an outrageous price. Surely the popcorn is more profitable than the movie, which must be rented and advertised at great expense and shown in a large, and often expensive, piece of real estate through a fairly expensive projection device often operated by a unionized employee.

The cash register receipts will tell you quickly and easily what the total revenue is for popcorn sales. Some of the expenses are straightforward: the costs of the kernels, repairs and replacement of the machines, electricity costs, etc. The wages of the sales staff are trickier, however, because the same people who sell popcorn also sell pop, chocolate bars. One can assign a proportion of their wages to the cost of the popcorn by several means including:

- percent of their time spent selling popcorn
- percent of snack bar sales that are for popcorn
- total snack bar salary less the snack bar salary that would be required if popcorn were not sold

Each of these is likely to yield a different result, and the choice of method is arbitrary.

Beyond these considerations, however, is the fact that one could not sell popcorn for an outrageous price were it not for the movie. That is, the rental and advertising of the movie and the costs of the real estate, projection device and employee to operate it must all be considered marketing expenses for the popcorn.

The situation here is somewhat different from that concerning performance evaluations. A manager has a level of satisfaction with how a subordinate handled each of their accountabilities as well as a level of satisfaction with their overall performance; the latter is not the sum of the former. On the other hand, a movie theatre has a profit, but each product it sells does not have a profit. Decisions about what products to continue must be made by some basis other than “calculating their profit”.

## SUMMARY

Every example of misuse of mathematics relates to values. In each case, the value of an entity – a role, an employee’s performance, a product, etc. – is treated as though it can be calculated by adding the value of component parts. But entities are valued as wholes, and the value is a judgment on the part of an individual. We must next look at why we are so reluctant to treat values that way.

## 2. WHY DO WE REPEATEDLY INTRODUCE SUCH SYSTEMS INTO THE WORKPLACE?

### ANAKLISIS

I have given some reasons for not treating subjective issues mathematically as though they were objective, but what is the force driving people to use numbers this way? The most frequently given reasons for this practice is that it prevents inappropriate bias, that is, bias rooted in self interest, prejudice and favouritism. The argument is that if decisions are based on formulas and calculations then they cannot be influenced by a manager’s personal relationship with an employee, emotional attachment to a product, or desire to make it easier to fill a vacant position by offering an unreasonably high salary for it. Certainly, bias can be a real problem. But it does not take much creativity to bypass most of the systems, so they are rarely effective in keeping assessments true to purpose. My hypothesis is that the major force in favour of these systems is anaklisis.

“Anaklisis” is Greek for “lean on”. “Klisis”, the “lean” part of the word, is the root of such English words as “client”, “clinic” and “incline”. The word refers to our need to lean on core ideas and on relationships to make sense of the world as a place in which we have some control. In psychiatry, anaclitic depression is the debilitating result of losing something one leans on. Historically, we have seen huge anaclitic resistance to scientific advances – a heliocentric solar system, evolution, the benefits of antiseptics – because they challenged core beliefs that people used to make sense of the world. Divorce, death of a loved one, being laid off similarly can have great impact on mental health as they remove relationships one leans on as part of one’s identity.

Judgment and subjectivity in the workplace are potentially anaclitically threatening both conceptually and in regard to relationships. Conceptually, proper management of the subjective threatens some people's core belief that all quantification is additive. When I discuss the actual use of the Hay system with managers, most of them immediately understand that the system attempts to treat as additive that which must be judged as a whole. Some, however, interpret the case as an example of human failing, saying either, "This just proves that Hay doesn't yet have the formula right" or "This just shows the human tendency to hold on to one's own biases even in the face of scientific evidence to the contrary". These people may use the expression, "The whole is greater than the sum of its parts", but they still carry additive mental models.

Proper treatment of the subjective in the workplace is even more threatening to our security in our relationships. Consider the following statements that might be made by a manager:

- a. "Sandy, observing how you work and the decisions you've made, I feel you are not working as effectively as I need you to so I will not give you a bonus."
- b. "I'll offer a salary of \$90,000 for this role because, having reviewed all of the relevant data, I judge it's worth that amount."
- c. "Our treatment of our employees does not feel fair to me, so I'll bring some changes in our practices and policies."
- d. "I'm not satisfied with the return we are getting from that product no matter what improvements we've made so I'm going to eliminate it."

These statements are anaclitically threatening to make in the sense that the managers making them leave themselves open for rejection. In our society, it can appear arrogant and unseemly to use one's own judgment as the justification for a decision, particularly one that affects other people. And judgments are personal; anyone disagreeing with those judgments or inconvenienced by them has reason to dislike the manager making them.

The following statements take much less courage to make:

- A. "Sandy, policy does not allow me to give you a bonus because your output is below target."
- B. "The Hay forms show this to be a \$90,000 a year role so that's what we'll offer."
- C. "Our employee survey numbers are down from last year so we'll make some changes."
- D. "Our calculations show that product not to be as profitable as our others so we may need to drop it."

In practice, this second set of statements entails as much judgment as the first. In statement A, for example, the manager would have judged how high to set the target in question; in B, the numbers entered into the Hay form come from managerial judgment and are later adjusted to bring agreement with the manager's judgment of the size of the role. **We cannot escape the need to exercise judgment, but there are social pressures against making it clear that a particular decision was made subjectively.**

This section began by addressing the common assumption that objective systems are implemented as a means to prevent bias. I argued that the systems are actually not objective and that they do not prevent bias, but the persistence of self-interest, prejudice and favouritism must still be addressed. I suspect that anaklesis is what allows bias to continue. If an employee makes a decision based on self-interest, prejudice or favouritism, this can only be addressed by someone else who notices it, and this requires two anacritically threatening actions.

- First, the other person must make the accusation. Accusing someone else of a breach of ethics can itself be anacritically threatening. The accused is likely to take offence, and the accuser may be ostracized by others for having made the accusation.
- Second, the accuser must defend the accusation, and this can only be done through judgment. If I accuse you of a hiring prejudice, you can defend each of your hiring decisions. I can only counter with my own subjective interpretation of the data you present.

In sum, anacritic threat underlies both the use of pseudo-calculations (purportedly to prevent bias) and the tolerance of prejudice and favouritism (which are anacritically threatening to challenge).

## **WHY THESE SYSTEMS PERSIST**

I have been paying attention to what is accepted in normal discourse as justification for statements and I have noticed that the flimsiest of justifications are often not challenged. As long as someone has a justification outside of their own judgment, their position is accepted. **I believe that the function played by these quantification systems is to give managers something outside of themselves, outside of their own judgment, to point to and say, "This is the basis of my decision."** The purpose of these systems, what sustains them, is not better decision making but lowered perceived anacritic risk.

### 3. WHAT IS A BETTER METHOD FOR ADDRESSING THE ISSUES SUCH SYSTEMS ADDRESS SO POORLY?

There are three elements to more appropriate decision making in the work place. First, there must be methods that are grounded in the employee's accountability to exercise judgement rather than in the belief that all decisions can be made objectively. Second, there must be methods to ensure that those judgments are made without prejudice and favouritism. Third, the anaclitic risk of exercising judgment must be lowered. I'll address these issues separately.

#### A. METHODS GROUNDED IN THE ACCOUNTABILITY TO EXERCISE JUDGEMENT

If we consider decisions such as the amount of a bonus to an employee, whether to discontinue a product, and how much pay to offer for a role, it is useful to keep in mind a number of points:

- Such decisions are always the accountability of an individual employee. There is often the appearance of decision by committee, and there may be one or more individuals with veto power, but it is almost always clear that one person has the accountability and authority for the decision.
- Such decisions almost always must be made in the context of strategy and policy.
- Such decisions are almost always made better when informed by facts. Count what you can count, measure what you can measure, then exercise judgment.
- The employee accountable for the decision will usually have a judgment about which way to go, and it is usually appropriate. **The workplace challenge is not in making the decision but in presenting it honestly as a judgment.**

These points are applicable to the kinds of decisions discussed in this paper:

- **Amount of a bonus.** An employee's role is a resource given to a manager. It is the manager's accountability and authority to determine what is fair compensation to the employee for how good a resource they were. In making such a judgment, the manager will take into consideration facts regarding the employee's output, the challenges faced by the employee in producing that output, the resources provided to the employee, etc. At the end of the year, manager's have a very good sense of how much would be fair to pay the employee above and beyond the salary they already received, and has no trouble coming up with a figure that fits within policy.

- **Discontinuing a product.** The head of a business unit or some other manager will have accountability and authority for determining product mix. Such a decision needs to be made in the context of strategy, e.g. "Are we a chain of discount clothing stores, full-service clothing stores, stores with clothes for business, or what?" When determining whether we should continue to sell socks, we should consider whether we pay more to the wholesaler for socks than we can charge for them and how much storage space and display space the socks occupy but we should also judge whether the socks we pay \$15 for and sell for \$12 play a key role in selling \$1,200 suits (Jaques, 1997) and allowing ourselves to advertise as a full-service clothing store. And we need to consider other scenarios; if we discontinued the socks, what would we use the storage space and display space for and would they fit better with our strategy and lead to greater overall profit? There are many factors to consider but no formula to plug them into. A competent retail executive will, however, be able to come to a judgment.
- **How much pay to offer for a role.** Within policy, this needs to be the MoR's<sup>4</sup> decision as it is a resource the MoR is giving to the manager. There are facts to consider, most important being the length of the longest task in the role, the fair value of a role with that time span and the market rate for such a role. Capable MoRs have little trouble judging what will be a fair compensation for the role.

**All of these decisions need to be made by the judgment of some employee informed by available fact. And that is their job. They are paid to make decisions about employees, products, roles, etc. The straightforward solution is to let them do their jobs.**

## **B. REDUCING RISK OF SELF INTEREST, PREJUDICE AND FAVOURITISM**

Letting employees do their jobs through exercise of judgment does run the risk of self-interest, prejudice and favouritism. Again, the employee's judgments may be affected by their personal relationship with the employee in question, their history with the product in question and how it affects their own reputation, and how the pay for the role will affect ease of hiring. This is where the manager of the employee in question comes in.

- **Amount of a bonus.** An MoR needs to review the bonuses a subordinate manager assigns to see if they seem fair. The MoR needs also to hold subordinate managers accountable for their subordinates' outputs. The MoR's question there is, "What output are we getting for the money - including bonus - we are paying this employee?"

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<sup>4</sup> The MoR, or Manager once Removed, is the manager of a manager.

- **Discontinuing a product.** The manager of the individual making product decisions needs to review those decisions and their results. Other people affected by the decision – in sales, service, marketing, etc. – may need the ability to escalate if the product decision makes their job impossible.
- **How much pay to offer for a role.** I have argued that the MoR must determine the pay for the SoR's<sup>5</sup> role. The MoR's own manager must hold the MoR accountable for what the manager accomplishes with his/her own resources. At each level, there must be accountability for balancing what one accomplishes against the resources one has been given. Each manager must understand that the greater the resources they are given, the more they will be expected to accomplish.

In short, the quality of each employee's judgments must be judged by the employee's manager. This does not entirely eliminate the possibility of bias when the biases of the employee and their manager are in alignment, but it will seriously reduce the likelihood of bias. Ultimately, the quality of decisions can only be evaluated through judgment.

### C. REDUCING ANACLITIC RISK

In "The Elephant in the Parlor" (Harvey 1992), Jerry Harvey argues that Requisite Organization is little known because its concepts are anaclitically threatening to the models of people in the management field. In addition, I believe that each Requisite practice, viewed in the context of most management systems, is anaclitically threatening to employees' security in their relationships at work. At the same time, Jerry says he is an advocate of Requisite Organization because it is the only system he knows that reduces anaclitic threat when implemented fully.

I know no way around this. Picture an organization where employees are accountable for:

- working effectively (according to the level of their role, which determines the level of their compensation) and with full commitment on tasks assigned by their manager
- giving their manager their best advice
- staying with policy (including policies regarding treating others in a trust inducing manner)

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<sup>5</sup> An SoR is a Subordinate once Removed, the subordinate of a subordinate.

Picture furthermore that managers are held accountable for:

- their subordinates' outputs
- exercising leadership
- building a team of capable subordinates
- continuous improvement

Finally, picture MoRs held accountable for:

- ensuring that subordinate managers are managing appropriately
- developing the talent pool in their area
- hearing appeals by SoRs

These elements, implemented as a system, will reduce anaclitic threat in the workplace. As a whole, they will allow employees to feel comfortable in exercising their best judgment. Without them, it can take unusual courage for an employee to say, "I've examined the facts, but it is my interpretation of them, my judgment, that leads me to this decision."

#### **4. WHAT IS THE COST OF THE CURRENT APPROACH?**

It might not take much effort to eliminate dysfunctional numerical systems in an organization and to decree that decisions will be based on data integrated by judgment, not by pre-set formula. But without addressing the anaclitic issues raised by the accountability for such judgment, there is a danger that employees will be reluctant to express their judgments and a further danger of bias. On the other hand, the conditions laid out above for minimizing anaclitic threat are quite burdensome. One must note the costs of not addressing them. There are five such costs.

The most obvious is **bad decisions**. Systems using pseudo-arithmetic will lead to inappropriate decisions regarding bonuses, products, compensation, and so on. The systems are often over-ridden, but not always, particularly when those most affected by them have little power. The federal government, for example, uses a point system for choosing consultants for large projects; the system guarantees that the contract will go to a large consulting company that is geared up for writing proposals in the required format and in the case of contracts requiring any degree of innovation makes it highly unlikely that the best proposal will win the competition. When the systems are followed to the letter, the wrong person typically gets credit or blame for outcomes. An employee whose bonus depends on their output, for example, may suffer because the manager or someone else did not provide needed resources. Another employee may unduly benefit by unexpectedly favourable.

The second and third negative consequences of these systems are the **time** they take and the **discredit** they bring to the department generating them. I know of no performance evaluation system that managers do not resent and do not resent their Human Resources Department for.

Fourth, and more serious, are the **muddled conversations** they result in. An example of this is an IT department, for example, that is going through significant change and seeks benchmarks to determine whether it is making the progress it desires. An item it tracks is employee satisfaction with the services provided, the goal being to improve annually the average satisfaction with IT services as rated in the employee opinion survey. There is no strategic discussion of why employee satisfaction is important, no target goal for a desired state of affairs, no date for reaching that goal, no plan for reaching it. The decision regarding the numerical "mean" replaces the needed discussion about strategy. It is not just that a bad decision is made but that the systems interfere with the very dialogue needed to yield good decisions.

Fifth, and equally serious, these systems allow the **needed systems** to remain absent. Effectiveness, efficiency and trust require solid management practices. Pseudo-arithmetic systems allow those practices not to be implemented.

**It takes a serious investment to allow decisions to be made by judgment of the accountable employees. Without it, however, neither performance nor trust will be optimized.**

## Appendix

Addition Matrix for integers and other ratio scale numbers

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<b>1</b>	2	3	4	5	6	7	8	9	10	11
<del><b>2</b></del>	<del>3</del>	<del>4</del>	<del>5</del>	6	7	8	9	10	11	12
<b>3</b>	4	5	6	7	8	9	10	11	12	13
<b>4</b>	5	6	7	8	9	10	11	12	13	14
<b>5</b>	6	7	8	9	10	11	12	13	14	15
<b>6</b>	7	8	9	10	11	12	13	14	15	16
<b>7</b>	8	9	10	11	12	13	14	15	16	17
<b>8</b>	9	10	11	12	13	14	15	16	17	18
<b>9</b>	10	11	12	13	14	15	16	17	18	19
<b>10</b>	11	12	13	14	15	16	17	18	19	20

Pseudo Addition Matrix for Letters Used Ordinally

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>	<b>I</b>	<b>J</b>
<b>A</b>	B	C	D	E	F	G	H	I	J	K
<b>B</b>	C	D	E	F	G	H	I	J	K	L
<b>C</b>	D	E	F	G	H	I	J	K	L	M
<del><b>D</b></del>	<del>E</del>	<del>F</del>	<del>G</del>	<del>H</del>	<del>I</del>	J	K	L	M	N
<b>E</b>	F	G	H	I	J	K	L	M	N	O
<b>F</b>	G	H	I	J	K	L	M	N	O	P
<b>G</b>	H	I	J	K	L	M	N	O	P	Q
<b>H</b>	I	J	K	L	M	N	O	P	Q	R
<b>I</b>	J	K	L	M	N	O	P	Q	R	S
<b>J</b>	K	L	M	N	O	P	Q	R	S	T

## BIBLIOGRAPHY

- Bertalanffy, L. von. *General System Theory*. New York: George Braziller, 1968.
- Harvey, J. "The Abilene Paradox: The Management of Agreement",  
*Organizational Dynamics*. New York: American Management Association,  
Summer 1974. Also in J. Harvey *The Abilene Paradox and Other Meditations on  
Management*. New York: Lexington Book, 1988.
- Harvey, Jerry. "The Elephant in the Parlor or Who the Devil is Elliott Jaques?" in  
Cang, Stephen (Ed.) *Festschrift for Elliott Jaques*. Falls Church, VA: Cason Hall  
and Co., Publishers, 1992. (Also in J. Harvey *How Come Every Time I Get  
Stabbed in the Back My Fingerprints Are on the Knife? and Other Meditations on  
Management*. San Francisco: Jossey-Bass, 1999.
- Jaques, Elliott. "Quantification in the Human Sciences" in E. Jaques *The Form of  
Time*. New York: Crane Russak, 1982. (Also in E. Jaques *Creativity and Work*.  
Madison: International Universities Press, 1990.)
- Jaques, Elliott. *Requisite Organization: A Total System for Effective Managerial  
Organization and Managerial Leadership for the 21st Century*. Arlington, VA:  
Cason Hall and Co., Publishers, 1996.
- Jaques, Elliott. "Product Analysis Pricing" (Draft for working paper) 1997.