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QUALITY: THE QUALITATIVE SIDE

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## QUALITY: THE QUALITATIVE SIDE

- by John H. Zajac

"The right quality and uniformity are foundations of commerce, prosperity and peace" is the inscription on the Deming Medal which is awarded annually to the Japanese firm with the most outstanding achievements in quality control. While we should reflect on the connection Dr. Deming draws between commerce and peace, what is of interest here is that Dr. Deming perceives a distinction between quality and uniformity which may not yet be appreciated by the manufacturers of American goods. Dr. Deming's area of expertise, and the "hot button" for American industry, is statistical quality control. Statistical quality control has the advantages of being definable, quantifiable, and relatively easy to implement. In addition, it guarantees the uniformity Dr. Deming requires.

Quality is more than uniformity, it is more qualitative than quantitative. Before "Quality" becomes another American management fad, preordained to failure, American business should be absolutely clear as to what it is. At the outset of this article I would like to assert that quality assurance (QA), statistical quality control, and related techniques can detect evidence of Quality, but cannot of themselves make quality goods. Some manufacturers believe

that instituting statistical quality control techniques generates that quality products will leave the plant's doors. While QA is important, if a product design is of inherently poor quality, adherence to a set of specifications will not magically produce good quality. It is possible to create quality goods without a Quality Control Department. It is also possible to produce shoddy goods and keep the quality assurance people on overtime forever. People tend to confuse quality control with quality, and it is an easy mistake to make. Quality control and its techniques can be defined and quantified; progress towards meeting QA goals can be measured and charted. Quality itself is a bit more slippery.

So, how should we define Quality?

At its core, this is a philosophic question that deals with values and asks, "What is best for Man?" We are saved a great deal of argument by limiting our discussion to what products are good; we will let others take up the matter with respect to art, literature, science, and education. Nonetheless, we must examine the nature of Man in order to determine what set of product characteristics is most consistent with that nature.

While this discussion seems now to stray far afield from the shop floor (where its recommendations must be implemented), these questions must be answered enough to

provide rough agreement as to what makes quality products. Our job here is made easier by the nature of the outcome sought. It is much easier to define "quality" as it pertains to hot dogs or blenders or autos than as it pertains to a painting or a sculpture. People, I would hazard to say, have an idea in their minds about what constitutes quality in tangible, useful goods. This may be too platonic for some, as it comes closed to the "Realm of Ideas," but I would assert that most consumers can tell the difference between quality and shoddy merchandise.

Because quality in goods strikes a responsive chord in people, we must look at the basic nature of people. There exists a great deal of physiologic, psychologic, and cultural evidence for the recent discovery that different patterns of thought occur in the left and right hemispheres of the brain. The left hemisphere houses rational thought processes, while the right hemisphere contains our more emotive personality traits. Language, for example, is a left-brain activity, while our more violent expletives in language are stored in the right brain.

This left-brain/right-brain, rational/nonrational split is not merely a phenomenon that shows up in goods we fabricate. It permeates our language and our culture. While we in the West stress rationalism, we have never rid ourselves of our nonrational tendencies. This is because the

rational, the nonrational, and the ability to meld them are all fundamental to what we are as people. As producers, our nature influences how we design and build things. As customers, this same nature dictates how we evaluate and appreciate what we purchase. A product, to be a quality good, must appeal to this dual nature and be not only serviceable and durable, but desirable and aesthetically pleasing as well.

It is here that we depart from traditional Western thought, and where, perhaps, the Japanese have an authentic cultural advantage. Western philosophy is fundamentally rationalist. It is best summarized by Decartes in "Cogito, ergo sum"--as though existence requires one only to think, to the exclusion of feelings and emotions. There are exceptions, Aristotle spoke of a "Golden Mean," and, broadly speaking, Western thought split at the very beginning with Plato being the rationalist and Aristotle being more experiential. Whether the brand of philosophy is called Rationalism, Empiricism, Utilitarianism, or Pragmatism, however, its theme is a homage to Reason, and its tenets would be identified as left-brain dominant. Oriental thought seems mystical to us, and much of it is; but it is more comprehensive, for it does not deny the nonrational part of our nature. While there are several brands of Eastern thought, that which is known as Zen or the Tao makes up the

leading set of assumptions in Japan. Zen means "the middle way" and proscribes extremes both the purely rational and the purely emotive. Zen calls to mind the psychologic dictum which states that any behavior taken to extremes is dysfunctional.

But does not the rational preclude the nonrational? Nonrational does not mean irrational. The quality, artistically pleasing product need not compromise its rational, "real-world" aspects. This blending of both rational and nonrational elements is what makes the creation of quality goods so difficult and rare. But if we can define quality we might then be able to analyze it, and then see if products can meet the resulting standard.

So what is Quality? Quality is that which embodies our dual nature in both the depth of thought and the height of expression. Quality is a challenge, since such depths and heights are infinite and difficult to reconcile. Quality strives for that ideal blend of form and function. Perhaps the most important characteristic of Quality is that attempt at reconciliation, that striving, that process which makes a commitment to excellence. The truly great product inspires a sense of appreciation or awe as to what humans can accomplish when we work together, both on a team and when we acknowledge the entirety of our individual nature.

This standard -- the blending of form and function, of

technical and evocative expertise -- can be applied, I believe, to the fields of the arts, the sciences, architecture, and the other fields of inquiry. Many will cringe at this, since I've suggested that Man is the measure of all things. Some suggest we look to God or Nature for our ideals. I certainly have no quarrel with that belief. Man, however, is the child of God or of Nature, and that which helps us approach any ideal must, in the end be consistent with any higher order. Since we are part of that higher order, what is consistent with its nature will be consistent with the best of ours. Again, our discussion here will focus on products, and when it comes to goods for human consumption, Man is the measure for those things.

How does this understanding of Quality get translated into goods? And does this understanding I've elaborated hold up?

What makes for good design of a product? Primarily, a product must fit its intended use. This "fitness for use" has several aspects. The first is service. When someone buys a product, the physical object is only the tangible part of the deal. There is also a bundle of services related to the ability of the product to do the job, such as reliability, maintainability, repair, and repair-part field support. There is a design aspect, since the form of the product must echo and reinforce its function. The integrity, the



"wholeness," of design is important. Let's take an example from the auto industry (most of my examples will be from the auto industry; it's familiar to most and aptly demonstrates American vs. Japanese approaches). American auto styling often reflects a reliance on "cues" (stripes, chrome strips, hood ornaments) to create identity in an expedient way rather than harmonizing design with function. To project these different cues, most manufacturers will saw off the fronts and rears of their vehicles and glue on ill-fitting plastic caps. The cars subjected to such treatment, underneath it all, are identical; the exterior differences in decoration do not reflect real differences. Such design expedients (known as "badge engineering") do not reveal a great depth of technical expertise or artistic integrity. The market segmentation implied by such techniques is as shallow as the techniques themselves.

The major implication of "fitness for use" is in its marketing aspect. Who decides if a product is fit? Who defines a product's use? The customer is the final arbiter. The customer has a set of rational and nonrational expectations that a product must fulfill. Since not all people have the same set of demands, and since it is impossible to mass produce on an individual, customized basis, it has been necessary for sellers to clarify and define segments of the buying public. One asks for trouble

if a product is designed, tooled, and produced in-house and then turned over to a marketing function to sell. When marketing is limited to short-term promotional and selling efforts, the organization is already swimming upstream. A frequent criticism of marketing in the auto industry is that by the time the results of research can be applied to car design, two or three years have passed and the public has changed its mind. Marketing's problem is twofold and circular: it has a short-term myopia and doesn't present long-term options, and it is also continuously asked to stamp out fires set by product planners who guessed wrong. Quality, which blends long- and short-term considerations (the short-term is usually quantifiable and the long-term isn't), is as necessary in marketing as in product design.

The quality of a product allows the customer to do what needs to be done -- the function -- and to feel good about the product and appreciate its beauty -- the form. but, again, Quality is more; it is the blending of form and function in a way that transcends simple specification of a design result. The designs which we hold in awe, such as great bridges, cathedrals, classic motorcars, and all that is elegant in clothing (as opposed to trendy), are able to achieve that fusion which illustrates the definition of quality. These designs retain their ability to inspire awe across generations; they are said to "withstand the test of

time." This is significant because they strike at the enduring essence of our humanity, a humanity shorn of fads, fashion, and affectation.

To put the above paragraph into a more mundane context: given products of equal price, the higher-quality product (the one best fitting the consumer's use) will be purchased. In fact, people will pay a premium for a quality-built product. People will pay more for a product that better fits their idea of how that product ought to be than for a product that seems just good enough.

How does this work in the marketplace? Remember, quality has a couple of manifestations. The quality control component is crucial, but adherence to a standard higher than just getting the job done is also important.

A product can adhere to specification, achieving high marks in quality measures, and yet be a resounding dud in the market. One example of this was the Americanized Volkswagen Rabbit. VW's quality assessment of the New Station, Pennsylvania product was favorable. In terms of adherence to production standards, the U.S.-built Rabbit outstripped its German cousin. The character of the American car, however, was changed: its "feel" was different, and the qualities which made up its identity were taken away. Its seats became nonsupportive, its suspension was softened, its steering was numbed, its interior reflected a bland,

color-keyed taste, and its performance was dulled. The changes were made so that the car would appeal to a larger market; but by trying to appeal to everyone, the Rabbit appealed to no one (or rather, very few). VW's previously loyal customers found the personality they wanted in other, mostly Japanese, vehicles. VW is now trying to regain that unquantifiable but definable "personality" by identifying their product as the "German car built in America." Time will tell if they can recover.

The Japanese are subject to the same problem. Nissan (Datsun to us) imported a vehicle known as the F-10. It possessed in full measure all the perceived Japanese virtues: excellent economy, low price, fine fit and finish. It managed, however, to combine the disadvantages of front wheel drive, (torque steer and balky shifting) with the disadvantages of rear wheel drive (cramped seating and lack of packaging efficiency) and all this on top of a mixmaster motor and unsurpassed ugliness. Again, the product adhered to specification, but to the wrong specification.

Aesthetic beauty and impressive design credentials are not sufficient to make a quality product, either. Perhaps the most beautiful of all sedans is the Jaguar XJ6L. Honored by many critics for its svelte, elegant lines, the Jaguar exudes a sense of being well-bred, from its real wood and leather interior to its race-proven engine and suspension

designs. People who have purchased this piece of rolling sculpture, however, soon become acquainted with the old injunction, "Nothing, not even a mistress, is more expensive to maintain than a Jaguar." Some statistical quality control would not hurt the British auto builders. To be fair, Jaguar is one British manufacturer that is beginning to get serious about its build quality, but the reputation has been earned over several years. A sense of the aesthetic, no matter how nice, is not enough. The idea of quality must not only exist, it must be executed. Statistical quality control techniques are good policing methods to ensure that execution.

While Quality is a standard, customers will accept certain compromises, given price considerations, availability limitations, regional chauvinism, and the like. Quality characteristics would include long product life, high degrees of fit and finish, easy repair and maintainability, availability of service, and ability to fulfill mission or purpose. Some applications do not stress, say, fit and finish. Farm and construction equipment come to mind. If the purchaser's objective is to get the job done, fit and finish would have a low priority. A competitor who offered all the necessary qualities and better fit and finish would obtain a competitive advantage, however, since additional quality always helps to sell a product.

The best design combines form and function, and can withstand quality control scrutiny and aesthetic taste tests. Good design betrays a depth of understanding about how a product is to be used, and who is to use it. Good design, a quality design, demonstrates that the whole is much greater than the sum of parts. Good current automotive designs would include the Honda Accord, the new GM F-bodies -- the Camaro and Firebird -- and the Renault Alliance. While the Honda and Renault are excellent examples of quality control, how does the Camaro, with its weight problem, high fuel consumption, unsparkling acceleration, and sometimes mismatched parts assembly, qualify as a quality car? Because it fits, exactly fits, the expectations and the uses its market has for it. Many people, even most people, would not view the Renault Alliance as a work of art, but to those who view space utilization, running economy, fit and finish, and a competitive price as priorities, the Renault's shape becomes beautiful.

Indeed, "quality" is often subjective or personal. Priorities for certain characteristics change from market segment to market segment. The subjective nature of quality is often downplayed or disregarded because of our objective quantitative bias. Manufacturers who ignore subjective factors must accept the consequences. To be successful, after all, the seller must serve the market. If the

manufacturer is not meeting his customers' needs, he leaves an opening for his competition. The seller cannot merely assume that he knows the wants and needs of his customers without running the risk of no longer being a seller.

Are there enough quality-minded people, however, to make a difference? Aren't there enough tasteless people in the world to keep up the demand for the trashy and the uselessly ornate? There's no denying that some people are not as sensitive to good design as others. A good strategy might be to build high-quality products, and then fill in the trash market with less well-built, more glittery offerings. American manufacturers seem to take the opposite tack. American "luxury" cars are nothing more than gussied-up and gadget-festooned versions of the ill-fitted mass-produced cars. Additionally, what happens if a competitor raises the customers' level of quality consciousness? Who then gets the business? Besides, even if only a small segment of a market is quality-conscious, it is that incremental 10 to 20 percent of sales where profit resides. After reaching break-even volume, an increase perhaps as small as 10 percent could boost profit three or fourfold, or in some cases spell the difference between profit and loss.

Since quality is an ideal, and since ideals are unobtainable, there is always room for improvement in the

quality of a product. The American manufacturers aiming at Japanese quality are shooting at a moving target. We should seek to beat the Japanese standards, not match them.

Tomorrow's standards will not be beaten by today's.

Since perfection is not possible, and since today's products do have certain compromises built in, the American manufacturer should be happy to know that there is room for improvement in today's products and that there will always be room for superior American products in the national and global marketplace.

It is good we are turning our production attention to quality control, but hanging a sign on a door saying "Quality Control Department" and hiring a few statisticians and QA engineers will not be enough to assure that quality products leave the plant. Quality is not the responsibility of the QA folks. Their job is to keep the product within certain tolerances. This job is necessary, but someone else decides what tolerances are acceptable. If this person wants to increase production "quality," he or she could simply relax the specification. Someone else decides what the product design will be. Someone else decides how many financial resources are allocated towards product research, market research, and field support and training. Quality is thus everyone's responsibility.



The Japanese may have been successful, not because they are "better" but because their culture accepts the validity of nonrational factors in product design, delivery, and assembly. My fear is that as Westerners, with a rationalist cultural bias, we Americans will latch onto what we do best, i.e., mathematical analysis, and confuse quality control with quality, confuse evidence of quality with actual quality, confuse the shadow with the substance.

There is some evidence for my concern. Products built in America by American workers for Kawaski, Quasar, Honda, and VW have better measured quality than like products made in the home market for those motorcycles, TVs, and autos. Our skills in quality control are evident, given a management that puts priority on quality assurance. The evidence for quality from American plants using American designs built by American management methods is not so strong. We can build foreign designs better than the home market builders, yet our own products do not fare so well. Our ability to implement a rationalistic system is not in question, but our ability to design and build a product with the necessary nonrational elements is.

Without a management system which has a commitment to meet and exceed market requirements, there will be no quality-designed and built American products. If we focus only upon statistical quality control we will surely fail,

and quality control will be relegated to the ever-growing junkpile of discarded management fads and fashions. The qualitative side of the issue of quality is perhaps the most important for us to grasp and understand. It is easy for us to disregard the nonquantified and the intangible, but aesthetic values and the very pursuit of quality are the other two-thirds of the total that is required for the existence of quality.

I say two-thirds because what is important here are three factors. The easiest to identify is the mathematical, statistical, rationalist quality control methods. We have spent most of this paper justifying and examining nonrational, aesthetic factors -- factors which are not necessarily quantifiable, but are nonetheless real. The third part cannot be represented by any object per se, but is the important precondition to the creation of quality goods. That is the dynamic, the process, the commitment to draw deeply from both the rational and the emotive. It is the will and desire to do the job right, whatever one's part in the manufacturing process. To produce quality goods one must have an organization committed to excellence. This need for excellence must permeate the entire organization; to have Quality one must have quality people.

What we are talking about, of course, is values. The terms commitment, excellence, will, and quality require a

clear and shared concept of values. In Western culture we've been guilty of attempting to erase the notion of "value." Values are subjective, often not purely rationalistic, and not quantifiable. By emphasizing the quantifiable and the previously justified, we have been going down the sterile road toward enshrining the average, and have been aiming for the mediocre. Business and industry are as much victims as perpetrators, for this is a societal movement. Education, business, and government have been caught up in this rationalistic conception of things. This leads to educational policies based on discouraging the ambitious, business policies based on short-term cashflow myopia, and government policies based on central economic planning and fascination with the merely immediate.

I paint too dark a picture, because other factors, such as our fundamental human understanding, are at work as well. But for the manufacturer, our dominant cultural bias may stand in the way of building quality goods. To put quality into our products we will have to swim upstream a bit to inculcate the notion of quality into our working lives. Leadership which instills the need for excellence must be brought to the fore. Any American manufacturer who wants to compete in the new world of international markets needs to know (and must therefore find out) what kind of quality product he needs to make to be competitive, and must

understand the cultural bias he will have to overcome to be successful.

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\* SIDEBARS \*  
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## LEFT BRAIN VS. RIGHT BRAIN

Our language, reflecting ourselves, has several "opposites" when it comes to ways of thinking. Here are a few common examples:

<u>Left Brain</u>	<u>Right Brain</u>
Science	Art
Western	Oriental
Male	Female
Objective	Subjective
Rational	Emotional
Sterile	Creative
Humanistic	Animalistic
Thoughts	Feelings
Pragmatic	Romantic
Real	Mystic
Head	Heart
Logic	Intuition
Digital	Analog

There are, of course, numerous other examples. The point, however, that these words are imperfect descriptors. We know what is meant, for example, by a rational, scientific approach. Yet anyone who has studied the history of science knows that scientific discovery is as creative and subjective as any process can be. We know what is meant by "artistic," but we see in modern abstract art the complete subjugation of emotive and evocative factors to the mere technique of painting. Both Science and Art are at

their best when they draw on both sides of the brain. The creative process only exists in the use of both sides; to deny one or the other ends in sterility.

## SUGGESTED READING

Dragons of Eden by Carl Sagan. This book investigates the evolution and physiologic nature of human intelligence. It outlines recent findings on left- and right- brain behavior, and the human ability to use both hemispheres.

Zen and the Art of Motorcycle Maintenance by Robert Pirsig. This improbably titled work is truly a seminal piece of writing. Because of its title it may not be given the serious attention it deserves, but it should be required reading for anyone interested in the question of quality. This work is the definition of quality, as it merges East and West. An immensely readable and practicable book.

The Abolition of Man by C.S. Lewis. For those who find Pirsig's synthesis of East and West bizarre, the conservative philosophy and theology of Dr. Lewis may be more palatable. This book is a sound thrashing of modern "value-free" education, but the means by which this is done is what is important to us. Dr. Lewis trods the "middle way" of the Tao to point out the rational and emotive portions of our nature. He then combines the best of these to develop the idea of Sentiment -- of informed feeling, reason tempered by sensitive understanding.

