Consciring: A General Theory for Subjective Communicability

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Abstract: *A fundamental theory of communicability is proposed, covering all human communication in its subjective mode. It is correlative to information theory and communication in the objective mode of modern science. An equation for functional-information is provided, equivalent in importance to that for structural information on which experiments in objective science are based. The theory leads to a scientific explanation for consciousness, or mind, and for all subjective communication.*

Introduction

Descartes, we remember, separated mind from the real world outside, splitting human communication into two. With this, in the early decade of the 18th century (c. 1700), began the separation of *subjective* and *objective*. Few realize that the very words *consciousness* and *conscious* are new in the English language, there being no words with the meaning we now give to them as conscious of something until Descartes introduced this modern meaning. Even as late as 1818 Jane Austen, in *Northanger Abbey*, has Mrs. Morland being introduced to Henry Tilney by "her *conscious* daughter," the meaning being very different from the current use of the word—it was older English, meaning that her daughter and Henry were *consciring*, guilty to a secret they shared. Communicability, prior to the era of modern science, was shared knowledge.

The theory to be developed restores this original meaning to conscious, as *conscius*, that is, *consciring*, meaning "I share (with someone, or with myself) the knowledge that . . . ," or, simply, "I know together with . . . (someone)." It requires, for its development, some advanced knowledge of logic-of-science, of factor theory, and subjective psychology, and some thanks to C. S. Lewis's *Studies in Words* (1967).

We shall bring all knowledge under the one rubric of communicability, conceived as conscire, "shared knowledge." The theory is introduced by way of George Gerbner's "Message Systems Analysis"

(1967), as representative of the present state of the art in communication theory and research.

George Gerbner's Message Analysis

Gerbner (1967) states, quite straightforwardly, that communication is interaction through messages that are "symbolic or representations of events or shared experience in a culture"—(which seems close to conscire, as "shared knowledge"). The messages, Gerbner continues, define for a person "the realities and potentialities of the human condition," that is, the perspectives, priorities, and values of a person. Message systems are the common currency of social interaction.

The problem, Gerbner says, was not how these messages are processed into information (in the telephonic concept) but how they form and maintain the culture of a society.

Gerbner gives special significance to mass communication, as a preponderant influence on modern societies: it forms "publics," and creates new grounds for collective thought and action "across all previous institutions and boundaries of locale, history and time" (1967, p. 436f).

For theory, Gerbner proposed that of *image*, about which, indeed, the field of communication theory was replete at the time, in the work of Pool and Prasod (1958) and the comprehensive studies under Herbert C. Kelman's editorship (1965). About any topic or event, the theory indicates, an individual has a structure of assumptions, views, ideas, and tastes that are preformed: they are preconceptions, which the research theorist conceptualizes as images. Gerbner proceeds to qualify the concept as follows: it is . . .

1. What there *is* to which the individual is being attentive;
2. What is *important* to a context of different appeals to gain attention (what is urgent, relevant, etc.);
3. What is the *right* thing to do (good or bad, right or wrong) about this; and
4. Involes "a structural relatedness of things" (i.e., what goes with what) (Gerbner, 1967, p. 442).

Message systems, therefore, cultivate images so defined. They can be analyzed with reference to these categories. The analysis, however, follows the methods of content analysis—the investigator observes and analyzes messages as such. It must imply that messages are normative, i.e., that they have a stable meaning, the same for everyone.

It is of interest that in the ensuing discussion of Gerbner's article (Thayer, 1967a, pp. 445-51) Colin Cherry remarks that Gerbner has ignored emotion in the analysis (p. 450). Dr. Ruth Davis asks whether an informational system, or modern scientific and technical knowledge,

which could be made available en masse by computer, would come within the concept of mass communication (p. 445), to which Gerbner has to agree, he supposes, that it would (p. 446). Professor H. D. Duncan points out that military, art, scientific, religious, economic, and other cultures, all of them systems of communication, are based on message systems (p. 451) and why should mass communication have prior significance in Gerbner's analysis? Gerbner replies that the industrialization of modern societies has transformed all else—politician and priest alike—and that problems of "public communication" must have priority on this account.

The questions raised by Gerbner and his discussants are as prevalent today as they were a decade ago: it is pertinent, therefore, to introduce our theory in the context of Gerbner's thinking.

The Sun in Shining

We begin by examining more closely the supposition that messages can be normative, meaning the same thing to everyone in a culture.

Descartes taught us to distinguish between objective and subjective statements. To say "The sun is shining" can be a statement of fact (true or false) in the objective world, or else a statement of feeling in subjectivity.

In the former, the statement is informational and one statement is all that is needed to convey the information: moreover, it can be tested—we can go outside to see whether it is true or not. Modern empirical science works with such statements, singular and positivist, free from personal whims (it is hoped), to reach "reality" about the world "outside" by testing (Stephenson, 1972a).

But if I say the sentence with emotional emphasis, then subjectivity is involved. To say, "the sun *is* shining," with emphasis on "is," may mean that I am objecting to someone doubting my veracity or senses; to say that "the sun is *shining*," may have reference to the brilliance of a sundown; to mutter the sentence silently to myself in a sickbed may indicate my frustration; to declare it loudly from a mountaintop may mean sublimity. And since we are all reflective, talking to ourselves, it should be no surprise to find that we can list hundreds of statements anent "the sun is shining" all in some sense known to everyone in the culture, and all informal, ostensible knowledge. Typical of hundreds of such statements, for example, are the following:

It sees all things
It is surely a pleasant thing to us
It shines into cesspools, but is not corrupted
It shines on wicked and good alike
I get weary of it

It is my physician
It is free and lonely
It is the true God of the Earth
We all demand a place in the sun
It is like a boiled lobster
Sunrise is heaven, blushing like a maiden
The sea is distilled in sunshine
To exaggerate is like setting a candle against the sun

Anyone familiar with Q methodology (Stephenson, 1953) will realize that Q technique operates with such lists of subjective (or self-referrable) statements, which were given statistical status by Stephenson (1935) as "populations" or "universes," and which we now call *concourses*, for which there is now a developing theory (Stephenson, 1978a).

The Law of Concourse

The first law in our pragmatic framework, the law of concourse, is to the following effect...

... all subjectivity statements are grounded in statistical quantities of such statements, all matters of common communicability.

Thus, about every message (in Gerbner's sense) in the subjective mode of communicability, every concept, every notion, idea, gesture, every object indeed, there is a concourse or concourses.

This is not a reductionist conception, but merely a recognition of the empirical state of things, that common communicability is made up of what James Ward (1886, 1993) called "primary elements of the psychic process," his concept of "presentations," that is, statements of the universal form:

I... feel... (something)

Children from an early age, say three years of age, express these statements, and from even an earlier age are subject to concourse. At about 18 months, a child may call every dog "bow-wow"—large, small, black, white, thin, fat, hairy, smooth, young, old, Sealyham, Irish Wolfhound, Pekingese, Pug, etc., all a "natural classification" for a child. At age three, every child in our culture has such a "natural classification" for clothing, furniture, people's faces, and vehicles (Rosch, 1973). All such are concourse. It was on this basis that Q technique was introduces and Q methodology developed.

The number of concourses is infinite. Every concourse is rooted in its culture, and every statement in a concourse tends to be "shared knowledge": everyone has some cognizance of every statement. The number of statements in a concourse is infinite and none normative:

every statement may mean something different to everyone and have different meanings for the same person in different functional contexts.

For theoretical reasons, all statements of a concourse are considered to be *equipotential* and *equipossible a priori* (Stepehnson, 1978a) i.e., in any context, each statement is as likely as any other to enter into communication. Nor is concourse restricted to verbal statements. There can be concourses for objects, e.g., "tables"—wooden, steel, glass, high, low, three-legged, four-legged, six-leged, painted, varnished, marqueteried, square, round, oblong, oval, octagonal, in every style and for every culture—the subjective significance enters when a person says he likes some of them more than others, or could take delight in owning some, or in any other way projects feeling upon them.

Peirce's Law of Mind

We proceed with the subjectivity of "the sun is shining." From its concourse of several hundred statements, every one a message in Gerbner's use of the word, a random sample is taken of say 48 statements. We call it a Q sample.

The statements are printed on cards, of playing-card size perhaps, one to a card. It is difficult to imagine that anyone could put them in any order that "makes sense." Our theory proposes, nevertheless, that:

> . . . *all new meaning forms in relation to statements of a concourse by way of feeling*

and that this is a fundamental law of mind, put forward originally by Charles S. Peirce (Buchler, 1950), and to which we give the name, *Peirce's law*.

If the 48 statements are placed before a person conversant with them—that is, before anyone of the culture—the law says that new meaning can be reached in relation to them (and only so) by way of feeling (and only so).

This is the basis of Q technique (Stephenson, 1935). Feeling is primordial, and primarily bifurcated into positive and negative—like fermions and bosons on which all nature is formed—of pleasure at one extreme and unpleasure at the other, of pleasure and pain, with no feeling in between.

Since statistical quantities are involved, and feeling is conceived as a cause of having innumerable small effects in any concerted process, the Gaussian "law of error" applies, and the effects will tend to take the form of a normal (statistical) frequency distribution, as in the following example for a Q sample of size n = 48:

	Positive feeling			None				Negative feeling	
Score	+4	+3	+2	+1	0	−1	−2	−3	−4
Frequency	3	4	6	7	8	7	6	4	3

(n = 48)

Q technique is the method by which a person represents his or her feeling, upon attending to a Q sample, with a given condition of instruction. Thus, the instruction could be for the person to represent what he of she feels is most important about "the suns is shining," in terms of the 48 statements, distributing the statements from most important (+) to most unimportant (−), with statements of little account in between (0).

The "forced" frequency distribution has been the subject of controversy and empirical study, forgetful that it is a theoretical matter: to give the distribution any prior empirical foundation would be to deny the fundamental premise of concourse—that nothing about it is normative.

Application to the Subjectivity of an Image

The technique can be applied to Gerbner's concept of image. Spread over a few days, to reduce confounding, anyone in the culture can perform a series of Q sorts with the same Q sample, for the following conditions of instruction:

1. Which of these *matters* most to you?
2. Which do you feel most people feel is *right* (good)?
3. Which offers you most *fun*?
4. Which are you most *at ease* with?
5. Describe *you, yourself*, with the statements
6. Which *should matter* most (i.e., ideally)?
7. Which is *television* most concerned with?

In each case the opposite, negative counterpart, is implied as well.

These put the Q sorter into a framework of retrospection about "the sun is shining," covering the first three conditions in Gerbner's definition of image—that it will be pre-set for matters that had gained the person's attention (Q sort 1), what was important in gaining the attention (Q sorts 3, 4, 7 as possibilities), and what seems to the right thing to do (Q sorts 2 and 6). Gerbner's fourth qualification, that image involves "a structural relatedness of things" is taken care of in the outcomes, as we shall see in a moment. The only addition to the design, not in Gerbner's definition of "image" is Q sort 5, in which the Q sorter describes himself or herself, and this is for a good theoretical reason.

It should be clear that the retrospection, as Q sorting, is within the individual's own subjective framework. His or her feelings are being

expressed, and the measurement is with respect to saliency, i.e., that one feels one statement more than another. Every statement is a matter of common knowledge, and the conditions of instruction, likewise, are in the person's everyday conversational language.

The rest is technical. The Q sorts are fed into a computer program for a centroid factor analysis, with varimax rotation to reach simple structure. This we shall take for granted, though the conditions for operant factors are of primary importance (Stephenson, 1970). The author's program is in the Computer Library of the University of Missouri–Columbia and has served now for 20 years. The results come in the form of a table of factors in simple structure, and a table of factor scores for the Q sample statements in quantsal units (*quant*ification of *sal*iency).

An example of the former, for the present experiment with one person who performed the 7 Q sorts, is given in Table 1.

The structure could be different for everyone, yet, as we shall see, it is lawful. *It is an operant transformation of the person's image for the subjectivity of the message "the sun is shining."*

It also indicates "what goes with what," the "structural relatedness of things," the fourth of Gerbner's qualifications for image. The image has three uncorrelated components, factors f, g, h.

It is of interest, especially as to "what goes with what," that factor f includes *self* (Q sort 5) and what matters most (Q sort 1), and that these, so expressed, appear to be what the person is *most at ease with* (Q sort 4).

Factor g is what is believed to be *right* (Q sort 2), but it apparently matters only *ideally* (q sort 6).

The third factor, h, is in relation to entertainment (*fun*, Q sort 3, and *television*, Q sort 7).

It is not difficult to deduce that the "structural relatedness of things," in this case, is indicative of "value, perspectives, and priorities" of perhaps a surprising nature—what is implied, at least, is that what matters most of the Q sorter in not moralistic (g) of entertainment (h), but something different (f). We cannot tell from Table 1 what this something is, but that is taken care of by the second table of data from the computer, containing factor scores from the Q sample, considered later.

Universality of Operant Factor Transformation

As noted earlier in the discussion following Gerbner's presentation of his paper (Thayer, 1967a, pp. 445-51), Colin Cherry remarked that emotion had been ignored in Gerbner's thesis (p. 450). He had put his finger on what, above all else, characterizes subjective messages.

Table 1: Operant Factor Analysis for one Person who Performed the Seven Q sorts (1 to 7) in Simple Structure

		Operant factors		
	Conditions of instruction	f	g	h
1	Matters most to you	x		
2	What is right		x	
3	What offers fun			x
4	Most at ease with	x		
5	You yourself	x		
6	Matters ideally		x	
7	television			x

(x = significant factor loading; all other values are statistically insignificant)

Even so, the theory of image is congruent with much in emotional directions. For Gerbner there is prestructuring, in image, of a person's "assumptions, views, ideas, tastes," his "values, perspectives and priorities," and these are surely emotionally linked. The concept of image was widely stressed in communication theory at the time, in the 1960s, for example in the work of Kelman and his associates (1965), where massive empirical support was adduced for intersocial images (La Vine), international conflict and images (White), and (Pool), events (Deutsch and Merritt), education, persuasion and images (Janis and Brewster Smith), and opinion on cold war issues (Rosenberg). In all of this, however, as in Gerbner's message system analysis, image remained a theory. What has been achieved above is to give image direct empirical form. *Nature is being allowed to speak for itself, transformed by technique into operant factor structure.*

This, by any accounting, is a remarkable achievement. The structure is not fixed, like a signpost, but an immediate transformation of form. We can now assert, without conditional riders, a most fundamental law, of universal applicability, to the effect that:

. . . *all subjective communicability is transformable to operant factor structure* (Stephenson, 1977b).

One would like to think that it would one day be called the transformation law of subjectivity. It applies to everything subjective in the Kelman studies (1965), and indeed to everything ever written in which subjectivity is at issue—in literature, religion, education, politics, art, science, common conversation—in all, Nature can be allowed to speak for herself, precisely as in the example just provided for a person, anyone, retrospective on the "the sun is shining."

The Induction Equation

There is also the second table of data resulting from Q methodology, that for the factor scores obtained by the statements of the Q sample.

These measurements have the same form as that first derived by Charles Spearman (1914, 1927) for measurement of mental ability in terms of individual differences in ability. Adapted for Q methodology, on the very different basis of *differences of saliency of feeling*, the equation is as follows:

$$M_{ax} = r_{af}f_x + r_{ag}g_x + r_{ah}h_x + \ldots + e \qquad (1)$$

where:

m_{ax} is the quantsal score gained by statement (x) of Q sort a;

f, g, h are independent factors, usually few in number;

f_x, g_x, h_x are factor scores in quantsal units;

r_{af}, r_{ag}, r_{ah} are correlation coefficients between Q sort a and factors f, g, h respectively;

e is error.

What is measured is feeling, expressed in Q sorting. It is assumed that this may be segmented into independent components f, g, h . . . , the number of which will be small, however, for theoretical reasons and pragmatic purposes. Feeling is primitive rather than complicated, impulsive rather than rational, and for practical purposes it is well to restrict experiment to a few salient segments rather than to become lost in details. It helps, for this reason, to work with Q samples of less than 100 so that the cream of feeling is at issue, rather than whey. We prefer the centroid method of factoring because it gives a more solid spread of such factors.

Factors are theoretic Q sorts, whose scores are in absolute quantsal units (standard scores, mean zero, standard deviation 1.00); absolute because the means for all factors, for everyone, for every concourse, every culture, are at the same zero point of no feeling. The scientific world has never grasped the significance of this, that there is a unit of measurement for feeling (pleasure-unpleasure), which is basically as sound as the units of length, mass, and time in objective science.

Expression (1) is as fundamental in subjective science as Einstein's expression for energy–mass transformation ($E = mc^2$) is in objective science. Its concern is with energy-mind transformation and although this is analogical at present, sooner or later it will have the precise transformation-significance of the physicist's equation.

The equation gives information in the Baconian inductive framework, of effects (and facts) first, after which causes (theory) may be induced. Modern science proceeds the other way, by the hypothetical-deductive method in which theory (cause) is *a priori*, and effects *a*

posteriori: it places its bets on predictability to save the scientist from "second-guessing" as to causes. Q methodology, instead, wants "second-guessing" to become a science. It is not widely recognized that the information on which the hypothetical-deductive methods of modern science is based, is categorical—the theory for which comes from R. A. Fisher (1935) and laser scientist D. D. Gabor (1951), described by D. M. MacKay (1969) as *structural information*. The information from equation (1) above is *functional information*, issuing from an experiment non-categorically. Factors have first to be found, like flowers in a meadow, after which they can be examined as to causes.

The End-Point Induction

Thus, the second table of data provided by the computer is for equation (1): the factors are theoretical Q sorts and each statement of the Q sample gains its quantsal score for each factor, e.g.:

	Quantsal factor score for		
	f	g	h
"The sun sees all things"	+1.00	+2.00	–2.50
"I get weary of it"	–2.50	–1.50	+2.00

It is upon this table that the investigator invests his or her inductive, creative, interpretive ability. *The theory is that all new meaning comes by way of such factors, indicative of inherent form in the concourse, and therefore in the Q sample drawn from it.*

The methodology ends, therefore, by leaving the induction in the mind of the investigator, but as more than mere logic and deduction. Thus, for Table 1, factor g was moral feeling, and factor h entertainment, leaving factor f unexplained; it was easy to determine from its factor scores that at issue was a preoccupation with health (the sun, loved, was yet a source of anxiety concerning sunburn and skin cancer, etc.) Not, it may be said, a remarkable discovery, but a discovery nonetheless in this context. The induction has to be with respect to feeling, to comprehend a continuum of consistent feeling from one end of a factor array to the other, and the acid test is always whether different interpreters reach the same feeling. Happily, the discoveries, like flowers in a field, are more abundant and obvious than might have been conjectured.

Communicability as Conscire

Part of our theory has been unfolded in relation to Gerbner's article and the concept of concourse, but much remains to be explicated. Message systems, Gerbner held, are common currency of a culture: they both form and maintain the culture of a society. However, he provided no theory of culture.

This we shall do, at the outset, in relation to concourse theory, and to the origin of the concept of subjectivity, of consciousness, of mind.

The beginnings are in the word *conscire*, from the Latin *scio* meaning "know" and *con* meaning "with." So there is the Latin noun *conscientia*, and the adjective *conscius*, meaning:

I know together with (someone) . . . , or
I share (with someone) the knowledge that . . . .

Words grow, however, like branches on a tree, some earlier than others, and they proliferate in meanings, or else die. From *conscientia* there came the word *conscience* in Middle English (14th century, c. 1350), and much later, the word *consciousness* (c. 1650, with Descartes). Few of us realize that consciousness and conscious are modern words in the English language. This information is from one of Oxford's literati, the late C. S. Lewis (1967) with whom one used to debate in Oxford days, and much of what has now been said comes from his study of the two words, *conscience* and *consciousness* (pp. 181-213), though its substance can be gleaned from *The Oxford Universal Dictionary* (Onions, 1933).

Consciring has the meaning of communicable—when two or more individuals share knowledge. It is very human, however, to share knowledge mainly when it has special significance as when one shares a secret recipe with another—an excellent example of consciring. So it is for secrets generally, as about a conspiracy, or sweet-nothings between lovers. The word conscire developed, however, mostly with reference to guilty secrets, and "fellow conspirators" is so attuned.

The meaning of shared knowledge was still attached to conscire, and to its form as conscius and conscious, into the early 19th century. Earlier, in the 17th century, Sir John Denham, in his poem "Cooper's Hill," chants of the hunted stag flying through:

the conscious groves, the scenes
of his past triumphs and loves

The word *conscious* is used in the exact classical sense, of knowing secrets, in this case the metamorphosed groves. Mention was made above of Jane Austen's imitation of the classics in *Northanger Abbey* (1818) where Mrs. Morland is introduced to Henry Tilney by "her conscious daughter," meaning that daughter and Henry were consciring, guilty to a secret they shared. And one may look conspiratorial in consciring: in Austen's *Sense and Sensibility* Mrs. Jennings is sure that Colonel Brandon's letter had something to do with Miss Williams, "because he looked so conscious when I mentioned her." *Conscious* did not mean aware of, or conscious of, or self-conscious about, but conscious with, i.e., conspiratorial.

It is not that there was no hint in the classics of the present meaning, conscious of (something): but it was rare. Lewis gives the example of Tertullian, in *De Testimonio Animae V* (c. 150-230), who speaks of convictions lodged in our "innate *conscientia*," there being some sense of

"mind," or "understanding," or "awareness." But for over a thousand years, *conscientia* developed only in relation to special "shareable knowledge," *conscious with*, and not at all *conscious of.*

The examples are drawn from Lewis's *Studies in Words* (1967). By the modern era, beginning with Descartes, *conscientia* had been left behind, and its new growth, *consciousness* put in its place, denuded of sharing with anyone or anything. Descartes was the first to use the word *conscious* regularly with the modern meaning of something "inside" and unshareable.

The Riddle of Mind

The sharing of unusual knowledge, especially secrets, as in conspiracies, or as witnesses of criminal acts, was clearly significant in human affairs, whether in Classical Greece, Latin Rome, or early England. It is easy to understand, therefore, why the word *conscienta* should move into the centuries with the meaning of conspiracy and conspiratorial, with *conscience* as their mentor. But why no comparable significance for the modern word *conscious of* and *consciousness*?

Lewis proposes that the common, everyday things and events of life pass us by without mention: only significant matters, such as conspiracies, secret love affairs, etc. are likely to enter into communicability and usually involve only a few people. The abundant ordinary things and events, everywhere around us, and with which everyone is familiar, scarcely receive mention by anyone.

With modern science, steps were taken to replace common sense by objective fact, but the resulting knowledge is not common knowledge. It is special knowledge, often secret, about the world outside, about reality. Meanwhile, we are left with no scientific knowledge about the familiar things everywhere around us. Modern science cannot explain a wooden table to us, except by decimation into molecules. Yet it is by way of these abundant things and events about us, that the conception of *conscio* as shared common knowledge should have grown. It became *consciousness*, not by retaining *conscire*, but by making it the secret of all secrets, the mystery of mind.

In terms of concourse theory, however, the mystery dissolves. All that there is to consider is *conscio*, whether of *conscience* where secrecy and conspiracy is involved, or *consciousness* as the more general term, where there is no secrecy whatever, but knowledge common to everyone and never mentioned!

The author has written thousands of paragraphs in a long life, but none more penetrating that the above. It marks an end to consciousness as the useless synonym it is (Stephenson, 1977b). "The most mysterious thing in the world," said William James, "is not an actual thing."

Psychologists who believe in a substantive consciousness, James opined, were listening "to a mere echo, the faint rumor left behind by the disappearing 'soul'" (James, 1890, p. 47). Yet today psychologists still search for substantiveness, as in Julian Jaynes' *The Origin of Consciousness in the Breakdown of the Bicameral Mind* (1976). A review of literature on consciousness by Natsoulas (1978) concludes by placing the secret of consciousness somewhere in the "deep knowledge" of our sensations; but, having looked there, Natsoulas could find nothing—"we don't know what it is," adding: ". . . we may be abysmally ignorant about familiar things, the occurrence of which we recognize" (p. 907). The fact is that psychologists, philosophers, and modern scientists, have looked for something that doesn't exist, missing in the process the most important aspect of nature's expression of form in shared knowledge, to which attention has been drawn in the above pages.

We now know, with the principles outlined above, that everyone can enter into conversation about the common things and events all around, in the form of self-reference, as Ward's "presentations." We now know that self-reference is subject to operant, inherent structure, represented by transformation into operant factors. These are measurable, in absolute quantsal units, whose origin is at a universal point of no meaning. Everything subjective is subject to inherent form, as surely for subjectivity as it is for nature and reality in biology (Thompson, 1942) as in physics (Torrance, 1974), which marks the end to the splitting of the world in two—the objective and the subjective. Both are conjoined in what Newton saw as the *transformation of form*, and what Thompson (1942) saw in "the shape of a snail shell, the twist of a horn, the outline of a leaf," and what Cyril Burt saw as *Theory of Form* (1940) upon which our fundamental equation (1) is based. All of this, from Einstein (1934) to Thompson (1942), to Burt (1940), is form made articulate by mathematics. There is also, from physics, the fundamental symmetry of nature, in fermion and boson, without which there would be no atoms and molecules and therefore no life (Handler, 1972, p. 62). As Thompson said, the achievements of mathematical definition, for example the equation for an ellipse, introduces us to all the ellipses in the world (1942, p. 1027) and thus extends our "range of freedom." The author of *Fechner's law*, Gustav Theodor Fechner (1801–1887) fashioned the psychophysical methods on the same mathematical grounds of form (a point not missed by Thompson [1942, p. 1027n]), and it is from this same fertile ground that Q technique and its methodology have taken root. The method is to study related forms and their transformations (Thompson, 1942, chapter 17).

Thus, all, and we mean all, subjectivity is rooted in conscire, in the common knowledge, the shareable knowledge known to everyone in a

culture. The sharing is what should have been called consciousness, and it meant merely being communicable in common.

Play Theory of Culture

The fundamental matter of conscire crosses all cultures but does not provide a theory of culture in itself. It is necessary, therefore, to proceed further into Gerbner's assumption that message systems are the common currency of social interaction and the agents in forming and maintaining cultures. As we noted, Gerbner provides no theory of culture, except to relate it to industrialization.

Nevertheless there is a classic, *Homo Ludens: A Study of the Play Element in Culture* (Huizinga, 1955), whose thesis is that culture forms in play, and can be maintained only in play under "fair-play" rules. Communication researchers, however, have been intent on studying the social effects of communication, oblivious of the "play" everywhere in evidence around them. Only one brief paragraph is given up to entertainment in the 1,000 double-column pages and 1 million words of the *Communication Yearbooks 1 and 2* (Ruben, 1977; 1978). The truth that daily news in the Western world are "stories" that are factualities and not facts or information is completely ignored by everyone in communication theory (Stephenson, 1964d, 1967; Arendt, 1967) except for the present author's work, which is also widely ignored. There are no references to "play" or to Huizinga in any of the current leading journals or works of communication scholars (e.g., Kelman, 1965; Smith, 1966; Thayer, 1967a, 167b; Edelstein, 1966; Kline & Tichenor, 1972; Clarke, 1973).

Huizinga's thesis is more of medieval history, it seems, that current comment. But there are many reasons why the play-element in communication in general and in mass communication theory in particular could have been neglected. Chief, perhaps, is the fact that "play" could only be described as to its rules and conditions, as in the work of Plath (1964) or Opie and Opie (1969) or in Herron and Sutton-Smith (1971) and others, and this is not considered to be very "scientific" when everyone is anxious to theorize, to deduce hypotheses, and to test them. Alone of communication theorists, the present author has sought to develop Huizinga's thesis in "The ludenic theory of newsreading" (Stephenson, 1964d), in *The Play Theory of Mass Communication* (1967), and in "Homo ludens: Play theory of advertising" (1979d), in which one's concern, of course, is with the subjective aspects of play.

There are two different aspects to consider, one in relation to stabilizing social institutions (familial, educational, religious, governmental, legal, military) and the other with respect to newly forming institutions, with politics, consumership, mass communication,

and advertising as prime examples. The established institutions are qualified, in our theory, by conditions of self-worth and communication-pain (Szasz, 1957; Stephenson, 1967)—there is a certain loss of self, for the "good" of society. It will be said, no doubt, that men and women have "found themselves" in working for the public good, and this we do not deny: but it is apt to be colored with self-worth, self-righteousness, and fervid proselytizing. The new institutions favor, instead, more of self-pleasing and communication-pleasure (Stephenson, 1967) in which self-reference is heightened.

In both, the forms of culture develop in "play," and some of this remains in the rules of family living (Douglas, 1970), in the rituals of religions, the panoply of armies, the puffery of courts—legal and governmental alike. In the newly forming institutions the play-elements are predominant—entertainment in mass communication (Stephenson, 1967), fads and fancies in consumership and its supportive advertising (Stephenson, 1979d), and plotting and intrigues in politics (Bailey, 1969). Thus, we take a benevolent stand about mass communication, and each of these new institutions, as conducive to communication-pleasure, i.e., as offering the individual some scope for enrichment of self-reference. We suspect Gerbner's concern for the "public" good.

A modern society, therefore, has the difficult task of striking a balance, for its citizenry, between the constraints of social stability and the freedoms of self-pleasing: at the moment of writing these lines (May, 1979), the gays of San Francisco, with much self-pleasing, rioted against the actions of a common jury, which is perhaps one of the soundest institutions of our form of law since it can depuff the courts on commonsense grounds! *Ex disce omnes*—from the one judge of the rest—American has yet to lean what "fair-play" really means (Stephenson, 1973a) and is therefore destroying much culture for what looks like anarchy in its place!

However it is not the present purpose to elaborate on a much-neglected theory in the field of communicability, but to indicate how it is brought within our own theoretical and pragmatic framework.

Subjectivity in Consumership

The distinction between information and subjective communicability is very clear in the marketplace. Prices can be listed, and certain forms of advertising identify stores, describe products, and give prices. But "nothing happens till a sale is made," as advertisers are apt to say, and this can involve highly subjective actions of communication-pleasure—in the excitement at buying a bargain, in the pretense of a haughty wealthy widow, in the diamond-buying of a lover, and so on, all of it playful, an acting out of theatrical-like parts.

How, then, to measure the play-elements in consumership? We chose two newlywed housewives, as alike in most respects as we could find, each with a limited budget, each working to support her husband's medical training as a physician. One, A, is quality-conscious, buying only quality goods. The other, B, is free-and-easy, shopping to please her husband. It is easy to imagine the "ploy" of A and the "pleasure" of B. Social psychologists would say that A was "acting out" in the image of her well-to-do mother and would be immune to the wiles and persuasion of advertising except such as involved quality goods. B would be regarded as a product of mass marketing and advertising, quick to change tastes, to pick up bargains, and yet sensitive to the real needs of her husband: the picture given to us, for example, by Katona (1964).

Clearly, complicated lifestyles are at issue. How, then, are these to be represented? Kernan and Sommers (1967) provide a mathematical model for the purpose in terms of promotional information as a functions of a product's attributes, performance, and value to the consumer (value being valency, i.e., whether the product is liked or not). The mathematical model involves a set of categorical constructs, or role types (such as A, B, above represent), interactions, meanings, and commitments. The authors have to confess, however, to "a massive array of testing problems," and are quite unable to make even a beginning in measuring anything for their elegant parabolic model.

In terms of our theory, however, measurement is straightforward as operant factors. For A and B a suitable concourse could consist of full-page color advertisements for consumer goods in mass magazines, and such as appear on television, depicted with whatever "stoppers," "plastic word representation," "primitive animism," "switchwords," "vulgarization," "symbolism," and the like (Stephenson, 1963b) as comes readily to creative advertisers. The newlyweds then perform a set of Q sorts with a Q sample of say 40 advertisements from the concourse under various conditions of instruction that cover what Kernan and Sommers sought to represent in their parabolic model. The conditions of instruction are the women's own words, and of course they have no knowledge of anything theoretical at issue. Here is a set of such instructions:

1. What would you be most likely to buy at the supermarket this week?
2. Which are most physically attractive to you?
3. Which do you enjoy most on television commercials?
4. Which would you feel most like reading?
5. Which do you consider to be most effective as products?
6. If you had extra money to spend, what would you buy extra this week?

7. Who do you feel influenced you most about your shopping? What do you feel she would buy this week?
8. Which do you feel is of the highest quality?
9. Which do you like the most?
10. Of you had an unlimited budget, i.e., money to buy anything you wanted, what would you buy?

In each case the instruction covers negative as well as positive feeling, the above simplified for ease of reading. Note that attribute (of Kernan and Sommers) is covered by Q sort 2, performance by 5, value by 8. The promotional information fed into the study is the Q sample. One form of interaction is possible at 7; that for television viewing is at 3; that for reading ads at 4. Conditions 1, 6, 10 offer to bear on role type, as to whether A and B are as they are by repute: A quality-conscious and B a more "modern" consumer. Precisely such as study was performed for us by a student and is reported (Goodall, 1971) and discussed (Stephenson, 1979d) elsewhere. The results are given in Table 2.

Table 2: Operant Factor Structure for Newlyweds A and B for a Q sample of 40 Advertisements of Consumer Goods, for Conditions of Instruction 1 to 10

		Operant Factors for				
		A		B		
Conditions of Instruction		f	g	f'	g'	h'
1	Buy this week	X	X	X	–	–
2	Physical attraction	–	–	X	–	–
3	Television viewing	–	X	X	–	–
4	Stop to read	–	X	X	–	X
5	Effectiveness (performance)	–	X	X	–	–
6	Extra money to spend ($20)	X	X	–	–	X
7	Significant other	X	X	–	–	X
8	Quality	X	–	–	–	X
9	Like most	–	X	–	X	–
10	Unlimited money to spend	X	X	–	X	–

(X = significant factor loadings; other values insignificant)

The complex consumership of the two newlyweds, by their own self-reflection, has been reduced to these two inherent operant factor structures—the universal transformative principle. The structures cover everything in the Kernan and Sommers theory, but whereas nothing at all was measureable in their case, those structures are in absolute quantsal units.

Inspection will show anyone that whereas A is tied to her "significant other" (7), (who happens to be her mother) as inquiry indicates, newlywed B has factors f' and g' free of her "significant other" (again her mother). A would continue to buy what she felt to be best quality goods,

irrespective of increase in spending money. B would buy better quality (h') with a little more money, but would "go on a binge" with unlimited money to spend (g'). Factor f' shows B to be a creature of the mass media, with Q sorts 2, 3, 4, and 5 defining her normal shopping.

Thus A is still subject to social control; B is, to a considerable degree, free, enjoying communication-pleasures vis-à-vis her factors f', g'. What in the literature is purely theoretical is here transformed to inherent structure.

With respect to the factors, each, remember, is a theoretical Q sort. That for f is estimated from Q sorts 1, 6, 7, 8, and 10, and represents A's feeling about quality goods: she has put the 40 advertisements, the informational input, into an order which, *for her*, is an order of good quality to bad, positive to negative in saliency. Factor h' for B is also *her* feeling about quality goods. But the two can be (and usually are) quite different: one person's fish is another's fowl.

Thus is represented one of the great truths of the human condition, that *subjectivity* is specific and one's own. *It is a most interesting demonstration of this uniqueness that factors can be highly specific to a person, yet their structures are lawful, as we shall see.* The fact is most easily demonstrated in advertising research, as in the studies of some of our students (e.g., Goodall, 1971; Levy, 1971; Branham, 1972; and Schreiber, 1973). Shakespeare, in *Henry V*, put it all neatly into the aphorism:

Every subject's duty is the king's;
But every subject's soul is his own.

Brief Discussion

It should be apparent that the concern in play theory is not with the rules of play, but with what kind of culture is fostered by what kind of play. One's own views have been formed from studies such as those of Opie and Opie (1969), who list 2,500 games that British children play in streets and playgrounds—e.g., chasing, catching, seeking, hunting, racing, dueling, exerting, daring, guessing, acting, pretending—and Britain, proverbially the homeplate of political tolerance, or amateur sports of every kind, and gambling on every chance, is in some sense a culture of "fair-play," a matter, theoretically, of communication-pleasure (Stephenson, 1967). Here, for example, is the Opies' account of child's play in Britain:

. . . It appears to us that when a child plays a game he creates a situation which is under his control, and yet it is one of which he does not know the outcome. In the confines of the game there can be also the excitement and uncertainty of an adventure, yet the young player can comprehend the whole, can recognize his place in the scheme, and, in contrast to the confusion of real life, can tell what is right action. He can, too, extend his environment, or feel

that he is doing so, and gain knowledge of experience beyond ordinary experience (1969, p. 3).

This is redolent of self-enhancing, without harm to anyone, whose hallmark is communication-pleasure. In such games the child can be self-assertive and doesn't have to explain himself:

> . . . He can be confident . . . that it is his place to issue commands, to inflict pain, to steal people's possessions, to pretend to be dead, to hurl a ball at someone, to pounce on someone, or to kiss someone he has caught. In ordinary life he never knows these experiences or, by attempting them, makes himself an outcast (1969, p. 3).

This is play *in excelsis*, with communication-pleasure, doing no harm to anyone else, yet self-enhancing to the player. We can now capture this as factor structure. So, too, it is as straightforward a matter to measure self-worth, or worse, self-pain, as when an American college coach cries at the loss of a football game. Thus, whatever the game may be (and some are "dirty"), and whatever may be one's absorption at the theater, the movies, concert, or television viewing, in all of which "the play is the thing," the above principles, of operant factors, of self-reference with respect to pleasure, or only worth, are everywhere applicable. It is possible, now, to determine how far tolerance and fair-play relate to communication-pleasure, and intolerance and "winning-at-any-cost" go with communication-pain. Which, however, is not quite the way our thinking goes: it is better to keep the principles as abductive (Stephenson, 1961), that any study in their terms, for any subjective experience, will bring interesting discoveries to light.

Application to Television Viewing

Research on the effects on children of the violence that they see on television has bee abortive, to judge by the Report to the Surgeon General (1972). The studies conducted for the report were all in the objective framework of behavioral science, in which children were never allowed to speak for themselves, but only in answer to preconceptions of the investigators. My own proposal (1976) was very different. It followed the principles here being explicated. The concourse was "still" photographs cut from the videotape of a program involving violence. With these a child can perform Q sorts under different conditions of instruction, as for the newlyweds above, directed at play-theoretical possibilities. A child views the violent program and then performs a series of Q sorts, e.g., with the following instructions:

1. Which frightened you?
2. What do you remember most?
3. Which did you enjoy most?
4. Which puzzled you?
5. Which do you feel your mother would object to?

    6. Which is most like you, yourself?
(Stephenson, 1976, p. 17). (These instructions, of course, are only
indicative, the child performing the Q sorts in the usual manner,
expressing feeling from most positive, pleasure, to most negative,
unpleasure.) The Q sorting is performed rapidly in such cases, and the
factor calculations readily made without resort to a computer in a
matter of 10 to 20 minutes (for 6 variables as above). One need not take
the example further, except to say that if each of the 30 or more
investigators employed on the researches for the Surgeon General's
report had conducted a study on the above Q-methodological lines,
research on 30 children would have produced findings that work by
these researchers on 10,000 missed completely. Such is the power, one
suggests, of play theory, and not just our theory of communicability.

Communication as Process

It is the fashion to consider communication as process. Nature and
reality are characterized by flux—"the only permanence is change"—so
Whitehead is quoted by Berlo (1977), whose version is that the process
problem is concerned with "where you were and where you will be, who
you are and who you will be" (Berlo, 1977, p. 12).

    Where you are and where you will be are matters of fact, of
information, and are not self-referential. But who you are and who you
will be come within our domain of subjective communicability. We catch
a glimpse of the subjective, in Berlo's essay, when he describes the
"being in the process," the "active coper," with a variety of assists in the
form of "expectation sets," "value sets," "behavioral repertoires," etc.
This follows the old-time objectivist-positivist paradigm, which Kernan
and Sommers set elegantly into a parabolic equation and then, like Berlo,
could do nothing about empirically. In this direction there is much
theory but no pragmatics, When Berlo writes of the *being* who is
processed into *becoming*, we are enjoined to think of communication in
the following manner: ". . . as make-believe, nondirectional, noncausal,
interactive process between the *now* of symbolic experience and the
long run (past and future) of hierarchical expectations" (1977, p. 26).
Becoming, in short, is not subject to "natural law" (Berlo, 1977, p. 20).
Which, of course, is unacceptable.

    Cappella (1977) presents the concept of process with what seems to
be insuperable difficulties: he writes that flux, as process, must mean:
". . . viewing events and relationships as ever-changing, without
beginnings, end, or any fixed sequence of events, and with all factors
affecting one another" (1977, p. 43). Communication, accordingly, has to
be situated "as an ever-changing, unbounded, unsequenced, and totally
interdependent process." Process, so considered, is therefore
intrinsically structureless. Moreover, Cappella continues, no
methodology exists ("or is likely to exist") that can meet the demands of

such a situation. He warns especially that "nothing could be more misleading or detrimental" to the scientific study of communication than to suppose that more complex research methods (and he mentions factor analysis in particular) can ever penetrate the process situation (1977, p. 47).

Nevertheless, the body of theory so far considered under the general rubric of Q methodology covers the situation he describes. The study with the newlyweds probes into situations that have some regularity "outside"—the weekly shopping, the budget limitations, the sequence of consumption, the social ties—but that "inside" are indeed an "ever-changing, unbounded, unsequenced, and totally interdependent process." The newlyweds' self-reflections are purely temporary, flashbacks, or flashforwards, in matters of seconds or minutes, and wholly unbounded. The conditions of instruction are haphazard, unsequenced. And everything they unfold is dependent on everything else "in" them; yet structure is the universal outcome!

Categorical Experimentation

Q methodology was introduced in 1953 in terms of a concept of *dependency analysis* (see chapter 2, Stephenson, 1953), so as to come to terms precisely with the "hard-line" scientist such as Rappaport (1966). It involved the logic of predictability by way of variance analysis of Fisherian balanced-block designs for Q samples; but a different logic, of operantcy and induction, came by way of factor theory for the self-same Q samples, by ignoring the *a priori* designing of the Q samples. We were prepared to study complex social and psychological phenomena by way of this dual logic.

The duality was no doubt difficult to grasp, and most users of Q methodology have been attracted more to the categorical logic and variance analysis with little real grasp of what this entailed. My own concern, since 1953, has been with the inductive side of the duality, with the importance of operant phenomena, as distinct from the mere operational definition of constructs. For operantcy the object is to elicit natural effects, as free as possible from instrumental influences imposed by the scientist (Stephenson, 1972a), put aptly by Berlo in a reference to our position in this respect, that communication research ". . . should be describing what the individual does, within the structure he provides, rather that within the context of researcher-imposed theoretic structure" (1977, p. 19).

There is a place for such theoretic structures, however, in dependency analysis. Much good research and scholarship in the past has resulted in valuable bodies of theory—in our own field no less than in theology, literature, science, philosophy and all else of human knowledge—that can form the basis of future studies and further advances. This is the case, for example, for Huizinga; his thesis, that

culture forms in play, is obviously important. The problem was, how to give it more than purely descriptive form and yet not trivialize it by oversimplified categorizations. It was achieved by the duality of dependency analysis; but it is easy to misunderstand what this really involves, and the lesson is particularly important if we are to meet the skepticism of all who pin their faith exclusively on predictability.

We return for a moment, then, to Gerbner's message analysis. His theory is that messages form and maintain the culture of a society, but he provided no theory of culture as such. The *theory of play* briefly introduced above, based on Huizinga, was in fact introduced into the Q sample for "the sun in shining," by categorizing the concourse statements in play-theory terms, in which the distinction was drawn between "leisure" play and "institutional" play, the former of the communication-pleasure (self-pleasing) and the latter of the communication-pain (self-worth) form, in the following Fisher balanced-block design shown in Table 3.

Table 3:Fisher Balanced-Block Design for Application of "Play" Theory to Subjective Messages

"Causes"	"Levels"		
A. "Play"	Self-pleasing (a)		Self-worth (b)
B. Valency	Positive (c)	Neutral (d)	Negative (e)

Valency is with respect to *feeling*, from pleasure (c) to unpleasure (e). (For a full account, see Stephenson, 1953, 1967).

There are six (2 x 3) combinations for the levels of the two "causes," A and B, namely ac, ad, ae, and bc, bd, be. If the theory has merit it will be possible to place all statements of a concourse within its categories, *on the basis of assumed general effects*. Thus, for the concourse of "the sun is shining," the following exemplify the categorizations:

ac: We all demand a place in the sun

ad: It creeps into the sea

ae: The day boils in the sun

bc: It sees all things

bd: It is a hymn to God

be: Nobody talks anymore of sunsets

The design can be replicated as many times as needed, say eight times, to provide a Q sample of n = 48. The well-known Fisher equation for variance analysis then follows:

$$\Sigma d^2 = \Sigma A^2 + \Sigma B^2 + \Sigma AB + \Sigma R^2$$
$$d.f\,(47) = (1) + (2) + (2) + (42)$$

where the Q-sort variance is Σd^2, ΣAB is interaction, and ΣR^2 is the replication variance.

This, however, assumes that statements mean the same thing to everyone and therefore contradicts the cardinal principle of concourse. There are situations in which theory is mere logic and can be represented in such Fisherian designs (an example is the study of art-form, in Stephenson, 1953, p. 130), in which case predictability is at issue. But usually, and for all subjective messages, the categorizations are tentative designations, without presumptions about predictability.

What then, is really at issue in this ambivalency? Theory, such as Huizinga provided, can only be expressed in general terms, even though it is apparent that regularity is the exception and not the rule. It is essentially abductive (Stephenson, 1961), meaning that along its lines discoveries are likely. Thus, as a tentative designation we are prepared to accept that "we all demand a place in the sun" is likely to be positive and self-pleasing—though it could mean the exact opposite to someone in a context of anger at the selfishness of man to man. The tentative allotment to a category is therefore merely to "make a beginning," to lay out as wide an assortment of statements as possible on theoretical rather than purely on random-sampling grounds, and to ensure the balance of feeling necessary for Q technique.

Thus, it is very rare that one will resort to variance analysis of any Q sample. The problem is not to test any theory categorically, but to "put it to work" in solving problems it embraces. Thus we are not interested in testing social control, or communication pleasure, as such, but at looking into outbursts of "primitive communication" attending the assassination of a president (Stephenson, 1967, p. 59), into the "key symbols" of the humility of a Pope (p. 89), the "amelioration themes" for international tension (p. 117), the "archaic forms of communicability" as in the Army-McCarthy hearings of the 1950s (p. 203), and into the "symbolism of self-reference" that Lerner specified but could never make into science (p. 122). Play theory bears on all of these, but never categorically. One would like to feel that Wilbur Schramm's appreciation of play theory is in terms of such advances: he writes, of *The Play Theory of Mass Communication*, that "After once exposing oneself to this [Stephenson's] brilliantly conceived theory, one can never again ignore the importance of play-pleasure elements in communication" (1974, p. 26). Yet Schramm proceeds to misunderstand it, confusing information theoretical matters with the purely subjective (Schramm, 1974, p. 27). He remarks that Stephenson "pays less attention than we might wish to interpersonal communication of to the use of the [mass] media for such tool purposes as instruction." The book was meant to be about mass communication, however, leaving communication in general for later development: the patience has born fruit, since there is now a totally new theory for educative "tool purposes" (Stephenson, 1979b), which is born of concourse theory, and which could do much to change practices

in basic educative processes in the future. One would echo Schramm's conclusion, however, that play-pleasure theory ought to generate important propositions for future research—but not on communication effects so much as on communication per se. *The Play Theory of Mass Communication* remains as a viable prima facie case for the subjective approach to mass communication. It suggests, as play theory proposes, that if it serves to change little of the stabilizing controls of society, but reinforces them under "fair-play" rules, then its real value—of fair play—may one day be grasped. Fair-play is what should cut across all cultures and values of our societies and cultures.

Lawfulness

Theory is introduced into Q methodology as indicated above, but also in a more important manner by conditions of instruction for Q sorts. The various studies in play theory to which reference is made above are not just routine applications of Q technique; each is a matter of experimental design and investigative ingenuity. Even in the simple example for consumership of the two newlyweds. Variables (Q sorts) were introduced according to *law* (Shibutani's law, 1970, of significant other, Q sort 7, Table 2), and with some ingenuity (Q sorts 1, 6, 1nd 10, which make possible differentiation with respect to disposable money). Q methodology is not an apothecary's plaster, the same for every wound, but a matter of experimental design to fit problems uniquely.

The most important procedure, however, is the logic that conditions of instruction are *hypothesis-inductive*, and expressions of *lawfulness* (Stephenson, 1953). The former is to the effect that each Q sort is essentially operant, allowing the Q sorter to perform as he or she sees fit: no Q sort is a test of its condition of instruction (which, indeed, could mean different things to different people).

The matter of lawfulness is no doubt difficult for most scientists to accept, because they have got into the habit of thinking of laws of nature as regularities, like Newton's laws of motion. In less erudite fields of inquiry, however, laws are pragmatic, like *Gresham's Law* (that bad money drives out good). Note that this is not a rule, but an empirical instruction. Anyone familiar with Thompson's *Growth and Form* (1942) will be aware of the many such laws, now almost forgotten, that enter into the biological field—*Borelli's* (the impulse of a muscle is proportional to its volume), *Froude's* (the larger the fish, the greater its speed), *Hertwig's* (the spindle in a cell sets in the direction of least resistance), *Leibig's* (we suffer want as soon as there is a deficiency in any one essential constituent of our food—the "law of the minimum"), and so on with Stokes', Errara's, Euler's, Muller's, Weber's, and others, some of which were hotly debated in the literature. These are not just rules, but opening into pragmatics. Their purpose was not to state universal truths, but to help the investigator in the conduct of his

inquiries: and all natural laws are in this form, of instructions (information) telling the scientist what to do to elicit changes (effects) in the world about him. This is how laws were conceived in Q method in 1953, where well-attested generalizations are expressed as laws and put to use by conditions of instruction in Q sorting.

Thus, we retain what has truth value from existing science and psychology in the form of laws to guide research into subjectivity. The concept of significant other (Shibutani, 1970) is typical: beginning with Freud's *Group Psychology and the Analysis of Ego* (1921) there have been abundant observations of special attachments to significant others (e.g., parent). Condition of instruction 7 of Table 2 (for the newlyweds) recognizes this as possibly lawful, meaning that a consistent process is probably at issue and, if so, it will find expression by way of a condition of instruction directed to that end. Or, again, as William James (1890) distinguished between what is me and what is mine, a bit of wisdom, like *Gresham's Law*, which has important psychological implications: we have found it necessary, therefore, to recognize this as *James' law* (Stephenson, 1974) and to use it widely in Q methodology. There is also *Roger's law of self-ideal congruity* (Stephenson, 1953), rooted in the work of Carl Rogers and his associates, and also in superego conceptions in psychoanalysis: people tend to behavioral adjustment in relations to concepts that have of themselves, and of themselves ideally—murderers in prison for life defend themselves by assuming complete congruity in this respect. All such laws are born in regularity, but are hypothesis-inductive in Q methodology. Most important, perhaps, is Peirce's *law of schemata* (Stephenson, 1977b), to the effect that operant factors are structured by a common strand of feeling, from the positive to the negative ends of the factors. *This logic returns observation to a rightful place in science, by asking for effects to be grasped before their causes are explicated.*

The question therefore is to ask what laws are there of special significance for communication research? One is the *law of image*. This, as we have seen, was purely theoretical in the 1960s with Kelman and his associates, as it was with Gerbner in the example given above. It is now a law in Q methodology: suitable conditions of instruction can elicit operant factors that are indicative of image. More profoundly, however, there are the probes by which effects of social control, and of self-pleasing are expressed, as exemplified for the newlyweds and consumership. No single conditions of instruction can reach these structures, but they themselves are lawful.

It has not been our purpose to elaborate upon the *theories of information*, or the *theories of science* (such as Elias, 1974, describes). But the development of Q technique and our methodology meant that attention was drawn very early, from the 1930s, to the necessity for

radical changes to be made in the then current belief in timeless and immutable laws, and for the concept, instead, of laws considered as conditions of instruction. The necessity, as expressed in one's controversy with Burt (in Burt & Stephenson, 1939), was for acceptance of gestalt-like principles, of "conformation," "form," "structures," "figurations," "process models," and the like. Elias (1974) draws attention specifically to synthesis as integral to a theory of science that "sooner or later will take the place of philosophical theories of science" (p. 36). Structural theories, discussed often as "holism," had been suspect as mere speculation or metaphysics—and indeed more often than not, e.g., in the case of Professor A. N. Whitehead's (1925) adumbrations, this was true.

Simple examples make clear the significance of "structure" in modern science: the chemical formula for water, H_2O, no longer means two atoms of hydrogen and one of oxygen, but these atoms in spatial relation to one another in the molecule. The recognition of relativity in the first decade of this century, and of quantum mechanics in the 1930s, opened up what the Physics Survey Committee of the USA National Research Council called "not a revolution but the discovery of the New World" (Handler, 1972, p. 62). Chief of the fundamental knowledge in this New World is that all known particles in it, without exception, involve a matter of symmetry, of fermions and bosons: the very existence of atoms and molecules, hence of life, depends on this matter of form. One mentions these matters, not to ride on the coattails of great minds in physics, but to indicate that our own advances are congruent with the New World. Sir Isaac Newton's transformation of form, Thompson's *Growth and Form*, and Sir Cyril Burt's insight that *factor theory* is of these same transformations (Burt, 1940), and ours of operantcy of factors (Stephenson, 1970) are all on the same line of a fundamental truth.

Reprise

The conscire approach to communication theory and research can now be put together. Some thoughts are apparently unthinkable at periods in out history and one of these has been that science can be made of "mind." But there is no "mind" in any substantive sense; there is only conscire, the sharing of knowledge in a culture.

This takes two forms, one with self-reference, for which we should reserve the term *communicative* and one without self-reference, which we should distinguish as *informational*. Both are matters of communicability in any culture.

Both, as science, involve theories of structure, in physics, chemistry, biology, psychology; and common to them all is our *theory of concourse*. New meanings arise in their own contexts. This is as true of the discovery of the DNA molecule's coding, as of any factor interpretation

by way of the functional-information of our equation (1). For the DNA molecule there was prior essential analysis, requiring full knowledge of the various sugars and nucleotides of the molecule; but this had to be synthesized subjectively. As for all complex conditions, the reduction to its component parts by itself could in no way grasp the synthesis essential for its structure. Subjective conditions equivalent to those put on the functional data for our inductive equation (1) are integral to modern objective science, Elias (1974) added that the consequences of this structural standpoint must be profound and far-reaching, and we agree.

With respect to communication, our theory has the above profundity. As in journalism today, so in culture down the ages, only exceptional events are apt to be recorded—murders, conspiracies, accidents, etc. The ordinary, everyday things of life pass by without mention. So it was that the word *conscience* was an early arrival in English, the word *consciousness* came three centuries later.

The latter has been our particular concern, and its presumed mystery has been resolved by recognizing the law of concourse—not as a timeless and immutable law, but a facet of man's structuring, that with respect to the everyday things around us we have "natural classifications," as flexible as particles in Brownian movement, but coherently of a kind. In relation to these, by way of feeling and self-reference, man arrives at new ideas, new conceptions, and this is our basic law of meaning: *Peirce's law of mind, that new meanings come from their own concourses by way of feeling and self-reference.*

From any concourse, by sampling, and by way of the "focalizing attention" or Q technique, Peirce's law is made operational. *We then reach the most astonishing conclusion that all subjectivity is transformable to operant factor structure.*

Three Studies of Consciring

We can proceed to exemplify what is involved in the above body of theory, and to do so in terms of brief reference to studies reported elsewhere, but worth mentioning again to indicate the scope of consciring. One is a study of a four-year-old child; another is for an everyday event in the life of a husband; the other for the conception of a common object, a white table. Each has a point of interest for our theory.

The Four-Year-Old

The study with a four-year-old girl was with a Q sample of 18 picture postcards, collected from a national gallery of art, of portraits of children in the age range two to eight years. The child was immediately *au fait* with all of them, and there must be thousands of the kind of the Western world, constituting a "natural class" for the child. The postcards were spread before her on the floor; she talked freely with them; and performed a Q sort (in effect) when I asked her to choose one most like

her (she felt) . . . then one most unlike her (she felt) . . . and so on until she had completed a Q sorting on the basis of the following frequency distribution:

	Most like				Most Unlike		
Score	+3	+2	+1	0	−1	−2	−3
Frequency	1	2	3	6	3	2	1

Obviously she had no idea she had performed a Q sort, why the choices were so scored, or what it was all about.

On occasions, spread over two days, she performed seven Q sorts, with the same postcards, with the following conditions of instruction given in the following order:

1. Most like me (as above)
2. What Mummy thinks I'm like
3. What my (younger) brother thinks of me
4. What my preschool teacher thinks of me
5. What I'll be like when I'm more grown up
6. What my (pet) dog thinks I'm like
7. What the very best girl is like

The seven Q sorts, duly factored, provided the following operant factor structure shown in Table 4.

Table 4: Operant Factor Structure for Seven Q sorts with Conditions of Instruction 1 to 7

		Operant factors		
	Conditions of instruction	f	g	h
1	Me	x		
2	Me according to Mummy		x	
3	Me according to Brother			x
4	Me according to Teacher		x	
5	Me more grown up			x
6	Me according to Dandy (pet dog)	x		
7	The very best girl	x		

(x = significant factor loading; all other values are statistically insignificant)

The example is from Stephenson (1978d). Conditions of instruction 1 to 6 are hypothesis-inductive for *James' law*, condition 7 for *Rogers' law of self-ideal congruity*. Berlo's problem of process, for "who you are and not who you will be," is encompassed, with respect to who the child feels she is now (1), in the past (2, 3, 4), and in the future (5). She is in a consciring situation, with a "natural classification" of children's faces (portraits), shared by all children in our culture at about her age. If we wish to say so, she is *conscious with* the portraits, talking with them with such remarks as "She's pretty," and "Don't look at me like that." The

conditions of instruction are also *conscire*: the child is sharing common language with the investigator. She performs a Q sort self-reflectively and provides the synthesis brought to light as the operant factor structure, unknown to her, in accordance with Peirce's law. She is in no way being tested for anything, but is merely representing her feelings (in which elements of cognition are also of course evident). Nothing is standardized for the child at any overt level—any practical size Q sample, and set of photographs, any frequency distribution, and a wide range of conditions of instruction (all in the child's own language) will reach much the same operant structure, or structures homologous with it.

We need not interpret the factors except to say that the author undertook psychoanalysis in the 1930s under Melanie Klein, the famous child psychoanalyst, whence the manuscript on *Q-methodology and Psychoanalysis* (Stephenson, 1954), and that I can assure everyone that I could have conducted a detailed psychoanalysis of the four-year-old in terms of her concourses! It is obvious that the operant structures are what psychoanalysis was probing for as the unconscious (Stephenson, 1979c).

But more important is the consequence for the education of children. The simple experiment supports those who believe that preschool children are not as incompetent as educational psychologists have led us to assume (Gelman, 1978). The view is now almost traditional that preschool children are unable to think logically or symbolically, have primitive minds, are able to think associatively but not cognitively, etc. According to Piaget (1952) they lack a concept of number. They apparently are "unable to handle hierarchical classification"; they are unable, as Piaget concluded (1926), to select messages that take the "listener's point of view and needs into account" . . . there is a long list of such ineptitudes. Recent studies by Bullock and Gelman (1977), Gelman and Shatz (1977), and MacNamara, Baker and Olson (1976) are presenting a better perspective of the preschooler's capabilities. Children do better than tradition suggests, and in the above study, made easy by one's handling of the pragmatics, the child was using "hierarchy"; also "kept straight" some ranking; thought symbolically, thought cognately, more by feeling than judgment; adopted instructions; . . . and wasn't being tested for anything involving norms, nominalisms, or categories. She was merely consciring, being *conscious with* everyday pictures, which everyone has ignored up to now, just as everyday things and events were ignored down the ages, The significance of this is the subject of an address given to the Eastern American Educational Research Association (Stephenson, 1979b).

The Irascible Husband

The second example is about a husband who gets up late for work and learns from his wife that it is raining. "Why," he says with obvious irascibility, "why does it rain every time I'm late?" "Why did you take my raincoat to the cleaners?" "Damn it, who left the car windows open?" He kicks the cat accidently and exclaims, "Get the damned thing out of my way" . . . and so on, for twenty minutes of consciring, in which his wife joins, adding fuel to the fire. It is an ordinary incident, which would be forgotten about the next day. The concourse for it consists in "presentations" of the kind just mentioned, spoken by the husband, and such as he might have given rein to in such a situation. A Q sample is readily prepared from it, with which, later that evening, the husband could reflect on the incident, and represent it by a series of Q sots with the conditions of instruction and resulting operant factor structure as given in Table 5.

Table 5: Operant Factor Structure for Seven Q sorts with Conditions of Instruction 1 to 7

	Conditions of instruction	**Operant factors**		
		f	**g**	**h**
1	My feelings this morning	x		
2	My feelings usually		x	
3	What I feel my wife's usual reactions are			x
4	What I feel her reactions were	x		
5	Me, personally		x	
6	What my feelings were on kicking the cat	x		
7	My usual feelings if not late for work		x	

(x = significant factor loading; all other values are insignificant)

Again it is consciring, retrospectively with respect to present (1, 4, 5, 6) and past (2, 3, 7). Clinical psychology and psychoanalytic practice is based in just such retrospection, all if it now transformable into operant factor structure. Modern theories of the analytical situation, e.g., by Foerster (1973), Hartmann (1964), Levin (1970), Mitterauer & Pritz (1978), are now all so transformable. Which does not remove the *inductive* nexus of such practices. By way of the inductive equation (1) the psychoanalysts can still pursue Freudian concepts, but now with operant data to interpret and not just speculation as to the archaic constructs of id, ego, and superego (Stephenson, 1979c). Note that the clinical analyzer, as much as the analysand, is subject to the same consciring, with respect to the self-same retrospections. An example has been in the literature in Parloff, Stephenson, and Perlin (1963).

I See this White Table Here

Karl Popper's *The Logic of Scientific Discovery* (1959) is widely acclaimed as gospel for deductivism. In it he left a challenge, in two statements, "I see the table here is white," and "The table here is white," which he regarded as experiential, and not subject to objective science. He remarked: ". . . from the point of view of evaluating its possible objective tests, the first statement, in speaking about me, does not appear more secure that the second which speaks about the table here" (1959, p. 99). In our framework the second statement is one of fact (or not) and this is subject to objective tests. The first is very different, being communicative and not just informational.

Both, however, are subject to operant factor structure. Popper wants to deny truth-value to *awareness* and *experience* per se, and this is our view too. But this is not what is really involved. About a white table there is a concourse of such tables—large, small, square, round, octagonal, four-legged, six-legged, carved, rough-hewn, glossy, matte-surfaced, low, high, side, end, etc. It is a simple matter to take a sample of them (as photographs) and to perform Q sorts to probe into what a person, any, feels about "The table here is white," for example with instructions such as the following:

1. Which do you feel is most characteristically a table?
2. Which do you imagine enters most into stories about a white table?
3. Which do you suppose is most in common use?
4. Which is most elegant?
5. Which would you feel happiest about in a kitchen?
6. If they were all made of polished steel, (and not white-painted) which would please you most?

Factor analysis brings operant structure to light, and about any, undoubtedly, Karl Popper could say that this ". . . may be described vaguely as a system of *dispositions* [his italics], which may be of concern to psychology" (1959, p. 99). But now such structures are of much wider significance, as form in science, in every branch, and a beginning in the science of consciring.

It is of interest that one began experiments of this kind at the Institute of Experimental Psychology at Oxford University in the late 1930s, into olfaction, shapes (aesthetics), haptic sense, and common objects, pointing to a new approach to all sensation, which World War II brought to an end.

For the statement "I see the table here is white," the same applies: now a person, me, is implied and the statement has innumerable self-referent possibilities. It could mean that you were looking for a black table instead. Or it was a Chippendale table that some fool had painted white . . . and so on, involving situations of memory, drama, desire, etc.,

which, expressed in everyday language, provides a concourse with such statements as the following:

It is just painted white
I couldn't sit still at it
Not practical except for a kitchen
It's a table asleep
It's purely decorative
It's like a white throne
Not a table for an uproarious meal
It's proud—duty clad

Again a Q sample, and again any one person who performs Q sorts with different conditions of instruction, and again the inherent operant factor structure can be seen in Table 6.

Table 6: Operant Factor Structure for Conditions of Instruction 1 to 7

		Operant factors		
	Conditions of instruction	f	g	h
1	What a white table means to you			x
2	What seems new to you about tables		x	
3	What the whiteness as such means to you			x
4	Your favorite *feelings* about tables	x		
5	A table for peace (green is for war)	x		
6	For a decorator's catalogue		x	
7	Describe yourself	x		

(x = significant factor loading; all other values are insignificant)

It is purely coincidental that the study involved 7 Q sorts and gave three factors, as earlier tables above: there can be as many Q sorts as one may wish, though ultimate over-familiarity with the Q sample will put a limit on this. And there may be 1, 2, 3, 4, or more factors, depending on the concourse and the communicability at issue. Again, however, the feelings are segmented. The factor structure could well be different for most people, each projecting his or her own dispositions (as Popper agreed). *Yet the structures are lawful.* The segmentation points to *James' law*: f is "me," g and h only "mine." Knowledge of the decorative arts explains g, and a mundane kitchen image, h. Again, only consciring is at issue—a person conversing with himself about common matters.

It will be asked, again, "But isn't there more to it?" Isn't there something *conscious* as such in these examples? There is *conscious with* in every case, if that is sufficient for an answer; but *conscious of* reaches elsewhere, into *self-consciousness, introspection, conscience* and much else, all of it subject to the self-same law of inherent operant structure, in

terms of concourse theory! What we conceive as *conscious* of is always complex and analyzable: the essence *of* it is a synthesis governed by form, about which there will be more to say.

Conscire involves mind, not minds, and for fundamental research any mind serves, or any person, any age, any creed, any culture. All study of minds in the mass must return, ultimately, to the above basic laws of structure. There is indeed not a single published study in any field of knowledge where subjectivity is crucial, that is not subject to these laws and Q-methodology. Within the field of communications research applications have already been many: on advertising ("infantile" and "sublime" in advertisements, Stephenson, 1963b), image of public utilities (Stephenson, 1963c), measurement of public opinion (Stephenson, 1964a), application to an international crisis (Stephenson, 1964b), the Kennedy–Nixon television debates (Stephenson, 1964c), attitude research (Stephenson, 1968), public relations programs (Stephenson, 1969b), foundations of communications theory (Stephenson, 1969a), the substructure of science (Stephenson, 1972a), the study of poetry ("Ode to a Grecian Urn," Stephenson, 1972b), application to television viewing (Stephenson, 1976), to English literature (Stephenson, 1977a), to the immediate experience of movies (Stephenson, 1978c), in medical communication ("The Shame of Science", Stephenson, 1978b), and most recently to educational psychology (Stephenson, 1979b) and self-psychology (Stephenson, 1979c). All of this is in the domain of common everyday communicability.

Communicology

Where, then, does all of the above leave communication theory and research? It is held to be in a sorry state. We found Berlo (1977) and Smith (1966) arguing for "a review of our whole concept of science and the phenomena on which our inquiry is focused" (Berlo, 1977, p. 11). Nordenstreng (1977, pp. 73–78) agrees and yearns for "holism," apparently within a Marxist framework. He makes reference to Karl Held, who complains that the general trend, to explain everything as communication, has become a fetish that explains nothing.

The simple truth is that from Ayer et al. (1955), to Cherry (1957, 1971), Schramm (1964, 1974), Kelman et al. (1965), Smith et al. (1966), Thayer and his symposia (1976a, 1967b), and on to the Sage Annual Reviews (Kline and Tichenor, 1972), Clarke (1973), not to forget the *Communication Yearbooks* (Ruben, 1977, 1978), all are in the paradigm of objective science, even where they protest otherwise. It is true of more recent excursions into communication theory in Europe by McQuail (1975), the cover on which shows a switchboard on a telephone exchange.

It is easy to forget that modern society is really very new. For 250 years, from Descartes to Newton up to the beginning of this century, science had slumbered in an old world. One cannot but suggest that communication theory and research, as represented in works of the order listed above, are slumbering in the same old framework. Mention has been made already of the Handler report (1972) of the Physics Survey Committee in the United States, that this century marks "not a revolution but the discovery of a New World" (Handler, 1972, p. 62). And what a world! In rapid succession the Nuclear Age, the Genetic Age, the Age of Astrophysics. Unhappily, the old-world principles took root in the field of communication theory and research and no heed was taken of the changing methodology of science (such as Elias, 1974, now describes). The Newtonian hypothetical-deductive methodology was *de rigueur*, as if one might catch up this way on relativity and quantum mechanics.

Worse, of course, has been the fascination with information theory (Szilard, Shannon)—more logic than science—which was grist to communicology's mill. Who could escape the fascination of the computerization of chess, artificial intelligence, problem solving, music, epistemology, and biological problems (Waddington, 1972)? Computerized games are now part of almost every affluent household in the United States. No one, before the advent of information theory, would have doubted the intellectual character of these applications, as the essence of being conscious. They are now programmed for automatic performance; an end has been put, consequently, to much speculation on the nature of intelligence (Stephenson, 1973b). The categories of recording, classification, decision making, hierarchical controls, etc., are now serving theorists in neopsychoanalysis (Mitterauer & Pritz, 1978). By the end of the century, Turing (1950) told us, educated people will speak without question of machines thinking and communicating with one another. They will have computer terminals in their homes, with access to masses of scientific and technical knowledge, and another Dr. Ruth Davis will no doubt ask whether this could then be called mass communication?

The answer is *no*. All of this effort in research, and all scientific and technical information is informational, in the informational mode of communicability, which never touches communication as communicative conscire, never touches self-reference and emotion, never touches the very heart of commonplace communicability. Of its enormous interest and value there need be little doubt—though critical voices are now being raised (e.g., Mowshowitz, 1976). But information theory was by very definition cut away from any fundamental involvement in the subjective side of things. Leon Brillouin (1962) in *Science and Information Theory* made it clear that the theory "is in no

position to investigate the process of thought." True, he wondered whether science will one day "cross the philosophical barrier and push the limits of science into an explanation of human value" (p. x). This possibility was conceived by Brillouin (and no doubt all other physical scientists would agree) as requiring the farthest limits of scientific advancement, as if the secret of "mind" will emerge in the minutest particles of nuclear theory or in far-off space-time effusions of astrophysics. One's own guess is that a fundamental solution will be found in the abstract symmetry of fermion and boson because the general theory of communicability grasps, with Einstein, the inherent form of reality "outside" (Torrance, 1974), and something at least analogous to this "inside" in our theory of operant factor structure.

The Future of Communication Theory

Nordenstreng's succinct review of communication theory from European sources (1977, pp. 73-78) presents conclusions consonant with our position, as far as his go. We have long been critical of work in the West (Stephenson, 1967). Our concept of mass communication, like that preferred by Nordenstreng, is communicability of the masses, and not the messages of the mass media. Nordenstreng complains that Western communication research has had no acceptable theory to support it, and has given no help to political science and sociology. We agree. But Q-methodology has not been remiss in these respects. Our first venture into communicative aspects of political science, a book entitled *Amelioration of Political Conflict* (Stephenson, 1963), was scoffed at by political science reviewers and could not find a publisher; several chapters from it, however, found their way into the *Play Theory of Mass Communication* (Stephenson, 1967) as chapters on reduction of international tension (p. 60), national character and charismatic leadership (p. 91), the democratic myth (p. 100), how nations see each other (p. 128), Kruschev's visit to the United States (p. 160), and the Army-McCarthy hearings (p. 168). That sociology was not overlooked is apparent in the same volume, with a chapter on audiences (p. 33), play theory (p. 45), and theory of social character (p. 80). S. R. Brown's (in press) work on *The Study of Political Subjectivity: Applications of Q Methodology in Political Science*, will remind Nordenstreng that Q-methodology has been busy in the political field. There is also a solution to Alvin Gouldner's critical regard of Western sociology, in which he proposes the concept of "reflectiveness" for the future of general sociological theory (Gouldner, 1970); his "reflectiveness" is precisely that of Q-methodology, providing operant factors where Gouldner can merely speculate. In these and other respects there is much correspondence in the positions that Nordenstreng recommends as necessary for future communication theory and research and those

already integral to Q-methodology.

Yet our premises are very different. His remains within the objectivist framework, and as far as it goes, we find little to object about. But it clearly doesn't go far and ignores the subjective altogether; Self-reference is *infra-dignitatem* in his paradigm. By that token it is blind in one eye, where two are needed for truth-value.

The preoccupation in the West, however, is best represented by the late Colin Cherry's *World Communication: Threat or Promise?* (1971). This calls for the formation of stable socializing institutions in newly developing nations, institutions that, in advanced societies, are being seriously eroded. All our knowledge, beliefs, feelings, are socially derived: the person and his society, Cherry notes, are two sides of the same coin (1971, p. 202). We are each made as our institutions make us and the shared knowledge we have within a society or culture is likely to be foreign to people of other cultures. How, then, asks Cherry, can global communication make contributions to increased trust between societies with very different cultures?

Not, he believes, by seeking "world government," if by that is meant shedding all cultural and national identities for a common culture, such as Margaret Mead (1961) once seriously suggested. Rather, some functions could perhaps be centralized (especially economic), and others reduced, working through the differences in cultures, and not on them (Cherry, 1971, p. 204)—which is Cherry's wisdom, but it scarcely can be attributed to communication theory in any particular sense.

Yet there are hints, in "primitive communication" (Stephenson, 1967, p. 59f.), of global events of shared events—the tragedy of the assassination of youthful President Kennedy, and the humility of Pope John XXIII, spread as shared emotion everywhere, across many cultures. Music knows no boundaries of culture. Nor indeed does the nearly universal game of soccer, seen by millions on television everywhere except in the United States (though even that is changing). The Olympics are testimony to play-elements working across all cultures. Gymnastic and ice-skating competitions are of international significance, testimony to splendid youth and beauty, if not also to pocketbook gains. Is it not true that ping-pong and cola spread peace, whereas armaments mean inevitable war—though the SALT agreements are hints at "fair play" even there! Does it not seem that play is a *sine qua non* for crosscultural communicability, and that this works through cultures as Cherry wished, and not on them? Not only so, this is the way all cultures form, in play.

The absorption of communication theory in the past on the *informational function* of mass media messages, as by Schramm (1964, 1974), is shortsighted and unwarranted in terms of the present state of our knowledge about information functions. Newsreading, for example,

of course involves information of interest to a reader—football results, stock market quotations, food prices, etc., in abundance. But what can one say of Schramm's objection to the communication-pleasure (ludenic) theory of newsreading (Stephenson, 1964d):

> ... is it really helpful to fit into (this) category of newsreading as play behavior, without differentiation, such different sub-behaviors as reading the grocery ads, reading about the pollution of one's swimming place, reading about a public boner by an elected official, reading a humorous feature story, reading the Pentagon papers, reading about the assassination of a leader, reading about the death of a friend, reading an interpretation of a Supreme Court decision—and to consider all that play is a sufficient umbrella to cover all of their different functions and consequences? (Schramm, 1974, p. 28)

Except for the grocery ads, all of these examples are factualities, not facts in any scientific or rational sense; they are stories about events, on which the reporter, writer, editor, has put his or her mark. The death of one's friend is not a bald statement that "John Doe died at 11:35 A.M. September 19th, 1978," but an obituary, an account of the tragic accident or lingering cancer. The teller in all of these examples is a storyteller, and although this may make partiality possible with respect to opinion, the reporter telling "both sides of a story," the common elements of storytelling, of subjective "play," are not only dominant, but quite overlooked by Schramm as to functions and consequences. Theory has to see beyond the different subbehaviors to what is significant theoretically.

For this, we would commend Hannah Arendt's essay, "Reflections: Truth and Politics" (1967): factualities can be quite fallacious, and all have self-reference (which Arendt also overlooks). When Clemenceau was asked who was responsible for World War I, he answered, "I don't know what history will say, but it won't say Belgium invaded Germany." The implication was that truth lay somewhere else. But is it in Adenauer's factuality that the barbarism of National Socialism infected only a fringe of Hitler's Germany? Did not Adenauer make possible a democratic Germany, on the basis of what is essentially untrue? Or, did not General de Gaulle unite a broken France on the fiction that France was a victor in World War II, a story that most Frenchmen believed? Is not a great politician, a de Gaulle, an Adenauer, a storyteller is excelsis? Did not these leaders transform terrible events and consequences into "good stories" that people believed and acted on? And what of Stalin's terror? Was there a complete failure of communication in Russia, or people tuned in only emotionally, without any meaning, such as one might guess from reading Chekhov's plays?

Where, then, is any truth of events and consequences?

This is no longer merely a philosophical question, as it remained for Hannah Arendt. It is a matter for communication-theoretical, scientific explanation. And this is what our theories are about and reaching toward. The *truth-value* of subjectivity is a complicated matter, but there is an answer to truth-value, in our theoretical terms, based on the principles already outlined above, along with their most general formulation under the rubric of Newton's Fifth Rule, now added to our armory (Stephenson, 1977b, 1979a).

Newton's Rules

In the early stages of a science, such as ours, observing effects is *de rigueur*, and a wise injunction before speculating too readily as to possible causes. Discoveries, we have indicated, are born in metaphor, in some sense in the common communicability of a culture (Stephenson, 1973a). We should remember Darwin in biology in this connection, and Marx in economics, Freud in psychology, Fraser in cultural history, all bountiful in observations, seeing effects with wonder, or despair, and getting into trouble only when they tried too quickly to be theoretical. Without doubt, their works are vastly metaphorical (Hyman, 1974): but where Hyman saw only imagination, our theory sees the way of creativity *de novo*.

Only Einstein can compare with the above four great names for their profound effects on modern societies, and Einstein's is a special case because he had 250 years of Newtonian physics behind him. Darwin could not have known the genetic code; and Freud, Marx, and Fraser all await genuine theoretic development. In so far as their observations are in the subjective mode, our theories apply, and their works are treasure troves for future exploration.

The theories, of coucourse, meaning, operant factor structure, self-reference, we promised, would be congruent with Newton's Four Rules, and with a Fifth Rule that he never completed and apparently was suppressed for a sufficient reason (as we can now say) that he could not possibly have reached a satisfactory solution at the time.

Newton's Four Rules, in his "Regulae Philosophandi" (see Koyré, 1965) provide the methodological bases for modern science, and the New World Science hasn't changed them. They are briefly as follows: all are methodological and rules of consequence (i.e., you can do something about them in practice).

RULE I is based on the belief that Nature is essentially simple: therefore the scientist should not introduce more hypotheses that are necessary to explain observations.

The astonishingly simple law that all subjectivity is transformable to operant factor structure comports fully with this rule.

RULE II is that uniformity is expected in Nature: therefore the same effects should be attributed to the same causes.

In Q-methodology the unit of measurement, the quantsal, fits well: it depends on the Gaussian "law of error," that innumerable small causes give rise to the "normal curve" distribution of effects. We do not know the causes, but theoretically, the Q-sort scores should be quasi-normally distributed on this account, of innumerable small causes. In addition to this, the zero of effects is a region of no meaning, no feeling, an absolute zero. There is a uniform unit of measurement, in pure numbers, the same for every Q-sort, every condition of instruction, every Q-sample, every person, in every culture.

RULE III is that Nature is both simple and uniform: therefore properties found in experiments can be assumed (at least tentatively) to apply to all such, a necessity for asserting universals.

The concern in subjectivity is with anyone's consciring, and we must expect (at least tentatively) what we find in one situation, will be applicable to all. Thus, the study of a four-year-old girl provided operant factor structure. It is to be expected for all such children—and indeed is readily verified.

It may be appreciated, therefore, why Q-methodology became identified with "Single Case Studies" (Stephenson, 1974).

RULE IV is that the propositions reached in science in terms of the above rules are to be accepted as true, at least until they need correction by future experiments or conditions: therefore you should not confute them arbitrarily, but only by way of experiment.

A correction to the study with the four-year-old child would be that such structure depends on a certain level of maturation of a child; for example, that there is no evidence of it for children below one and one-half years of age. Or, it is not to be expected that a four-year-old can perform a Q-sort meaningfully with statements about the philosophical nature of the universe: clearly, operant factor structure is in relation to the level of acculturation.

These Rules are implicit in scientific methodology and remain inviolate still. They found a ready application in the deductive methods with which Newtonian science became completely identified, with absolute concepts and structural (i.e., categorical) information. They are as apposite, however, for New World science of structure and form.

Newton was engaged upon a Fifth Rule to complement the others, which was lost among his papers, "asleep" until it was found in 1960 by the Sorbonne philosopher Alexandre Koyré (1965). Its concern was with the problem of propositions that can neither be proved nor disproved.

At the time, Descartes was proposing to explain the universe by vortex theory and Leibnitz by vitalism: Newton believed, instead, "that gravity does really exist" and acts according to the laws he had propounded. But there was no way to prove or disprove it, and no way to decide between gravity, vitalism, or vortex hypotheses. Newton was seeking a Rule to help in such a situation: he apparently wasn't satisfied with what he formulated and hid it.

There is a Rule for the purpose, based on the principles of these pages. It is as follows.

RULE V is that different hypotheses for a concourse, none capable of proof or disproof, are subjective hypotheses: therefore determine operant factor structure for them—they will offer opportunity for induction of new hypotheses, inherent in the structure of the concourse (Stephenson, 1979a).

As we have seen, conditions for instruction for Q-sorting represent different hypotheses, none capable of proof or disproof, as in the experiments represented in Tables 1 to 6 above. The factors open the door to new hypotheses by way of the equation of induction, equation (1).

Thus, the body of theory propounded above is aligned with Newton's Rules, including one he failed to complete, but which our methodology has solved. The Fifth Rule above is a profound matter, a way into all induction *de novo*: the theories, laws, and methods outlined above provide a *modus operandi* for subjective science, now embodying all five of Newton's Rules. Note very carefully that it in no way interferes with or replaces, man's and scientists' "focused attentiveness" (Schachtel, 1959) on the things about him, by which Q-technique functions, and by which man and scientists reach their own "understandings," their own "interpretations." Our theories provide objective data, by way of induction equation (1), for all understanding and interpretation: they do not remove the consciring person from the process, but merely offer him objective data upon which to function. On the other hand, there is now a law of inherent structure, of form, for all subjectivity, and that, by any reckoning, is quite something.

Truth-Value

We come, then, to a final step in our body of theory. It concerns the other branch of the Latin word *conscientia*, leading to conscience.

It took form earlier by three centuries than consciousness. But it always had its roots firmly in shared knowledge, except that it was secret, conspiratorial; within oneself it was conscience. Whether it was Sophocles saying what was "good" ("be valiant, he is conscious to himself") (Lewis, 1967, p. 189), or Shakespeare in Richard III saying that

"conscience makes a man a coward," *consciring* (good or bad) was shared with one's inner witness, one's reflective self. An example given by Lewis from Milton's *Paradise Lost* is especially interesting: Eve drew back a little from Adam's suite, impelled, Milton says, by

her virtue and the conscience of her worth,
That would be wooed, and not unsought be won.

We realize that Eve's beauty is a secret between Eve and herself, as worth wooing—a *conscientia* of secret wishes.

But how are values, of good or bad, to be considered in our theory? We recall Cherry's implicit faith that some functions of cultures could perhaps be centralized, and others reduced, working through differences in culture and not on them (Cherry, 1971, p. 204). Different cultures could learn, perhaps, to trust one another. To this our reply was an appeal to play theory as reducing divergence in cultures, literally in play—soccer, ping-pong, music, gymnastics, ice-skating—and its metaphorical form in tragedy (the assassination of John Kennedy), in compassion (the death of Pope John XXIII).

There is more to it that this, however, and where Cherry saw economics in the centralizing, our concern in communication theory is with myth, with the great themes of man's endeavors. It is here that our responsibilities lie, to fathom the core of our factualities, our storytelling, whether of poet, historian, editor, priest, or filmmaker. There are truth-values in all these conscirings. In objective science truth is reached by eliminating the whims and purely personal idiosyncrasies of self-reference. So also in literature and all factualities, of writer, poet, artist, for truth-value the same holds: only by eliminating purely personal self-references are truths reached in subjectivity. Thus Keats was adolescent in his early poems, but mature in "Ode on Melancholy." So it was for Yeats, childish with his Irish pixies, but a Nobel Prize winner with "Sailing to Byzantium." So also Homer, who sang of the deeds of the defeated as of the victorious in war, sang of truth. That Wilfred Owen's poems of World War I reached the same Homeric height is not granted by the *literati*: Owen fought in a totally senseless war (and was killed in it, like the millions of young men who suffered the same bestial slaughter), and yet could write:

I am the enemy you killed, my friend.
I knew you in this dark; for you so frowned
Yesterday through me as you jabbed and killed.
I parried; but my hands were loath and cold,
Let us sleep now ...

It is the tears of such a factuality which reach truth-value.

What our theory of the play-elements in subjectivity amounts to, is a profound matter, that truth-value—a story told of an event and its

consequences—can be transformation of reality and not just "the old lies," or merely "there are two sides to every opinion." It is *our* responsibility, as communication theorists, to fathom these truths. But where, in a Schramm or a Nordenstreng, or any other communication theorist, is there an inkling of such matters? All are dead, dead serious, where play theory could at least make tragedy of it!

How, then, prove anything about "good"? One leaves it, not as a paradox, but a simple problem of experimental design in Q-methodology. There is a simple solution, by way of Newton's Fifth Rule. Some things subjective are "good," provided the self-reference is like that of an amateur: for which we end with wisdom from an unlikely source, Marshall McLuhan, who wrote . . .

Amateurism seeks the development of the total awareness

Of the individual and the critical awareness of the ground-rules of society.

The amateur can afford to lose.

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