BELIEF: ITS CONTRIBUTION TO WHOLE-MAKING

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Sociologists are people who are interested in what holds a society together. How do things cohere? What is more, how do things come together again, when there are numerous factors which make them drift apart? These are the kinds of questions we try to answer.*

Yet I happen to be a sociologist, who is also interested in what makes for coherence or wholeness *in general.* Not just social wholeness. And vice versa, I am interested in why things break down generally. Not just in why societies sometimes come close to the breaking point. This means that I also study the wholeness, or the identity of an individual, or a family or a community or an ethnic group, even when that particular kind of wholeness cuts across and diminishes social wholeness.

To give an example: during World War II I happened to be the inmate of a variety of German penal establishments. The Germans felt rather strongly that my Dutch friends and I broke down the German social order by our subversive activities, such as listening to the B.B.C. and discussing the British version of the news with whoever wanted to listen. I on the other hand felt that my personal integrity, or wholeness was undermined by the German assumption that I would fit in their German order. In other words: two centres of wholeness (my personal identity and the German social one) clashed and I was actually very lucky that I survived that conflict, because the Germans did not particularly care whether the unexploded bombs they made us dig out, went off or not.

Yet nowadays I am going far beyond the strictly sociological pale by studying the theme of wholeness and the breakdown of that wholeness in the natural as well as the social sciences. I am intrigued by the fundamental dialectic between heredity and mutation in genetics, structure and reaction in chemistry, inertia and force in physics. I tend to think of a continual process of build up and break down resulting in balances, equilibria, variations, underlying physical, as well as social and mental reality.

All this is by way of introoduction. Later on you will see how the theme of the introduction is strongly interwoven with what I have to say about beliefs.

But first a more elementary question: how do sociologists think about beliefs? Beliefs affect the very coherence which is at the heart of the sociological investigation. What is more: they strengthen that coherence. If the German nation had not been held together by strong beliefs in its supremacy, the *Blut und Boden* theology and the God-like qualities of the Führer, it would have disintegrated even before D-Day. And consequently my survival chances would have been much, much better.

And the other way round: if I had not had such a strong belief in the necessity for independent inquiry, the supremacy of truth and the democratic process the Germans would have found me much, much less obnoxious than they did. In other words (and here we come to the crux of the matter) the

beliefs had a decided effect on both coherence and the breakdown of that coherence. They made both the Germans and me much more determined than we otherwise would have been. Yet precisely because these beliefs were so clearly established and delineated, the clash did become a matter of life and death. Understand me well: not just for me, but also for the Germans. If they had not been so keen to protect their ideological justifications, they would have succumbed much earlier to both the allied armed might and the determination of a subversive underground.

You may have noticed that I have not just talked about beliefs, but about *strong* beliefs. And this is important. It is not just any belief that makes for coherence, or wholeness. There are hosts of beliefs which have little effect one way or the other and so my original statement that beliefs affect coherence has to be qualified: only strong beliefs do. We all know regular churchgoers who recite the Apostles' Creed every Sunday but whose actual beliefs are much more strongly molded by an unstated Machiavellian business ethic. And the other way round we know others who never articulate deeply held Christian beliefs, but are strongly motivated by them. In other words, beliefs that have an effect on consistent behaviour and personality integration are always strongly held.

All this has a related consequence: in human relations reason can only be effective for the achievement of common goals when these goals are either irrelevant for, or consistent with, the deeply held beliefs of the parties concerned. Reason is ineffective, as we all know, when the proposed action is irreconcilable with deep-seated beliefs of the personalities or the collectivities involved.

And yet our culture deeply reveres reason and continues to behave as though anything can be solved so long as the reasonableness of the solution can be upheld. And in order to maximize reasonable solutions we upstage the importance of tolerance of beliefs. We correctly feel that by upgrading tolerance and reason and by downgrading beliefs diverse people can cooperate in important common action. As a result many thinking people lament nowadays that we are bartering our souls for technical advance.

There is then a dialectical relationship between on the one hand our souls, innermost self, strongly held beliefs and on the other our technology, our progress, reason, tolerance and weakly held beliefs. We need commitment for personal, family and social wholeness. Yet we also need relativization of commitment and minimization of strong beliefs in order to be flexible and reap the advantage of versatility for optimizing our standard of living and mastering our environment.

We have made three major points so far. The first one is that personal and social wholeness may clash. The second one is that strong rather than weak beliefs reinforce the wholeness of personalities, groups and societies. To this point we should add that strong commitments rather than weak ones deepen the conflict between these various wholenesses or identities. The third point is that tolerance or the relativization of beliefs can mitigate these conflicts and thereby advance the flexibility necessary for coping with the exigencies of the environment.

The last point needs further elaboration. For if tolerance and strong beliefs are juxtaposed, or at any rate have a symbiotic relationship, the optimization of technical progress may take place at the expense of identity at the various levels. And the other way round, the optimization of wholeness at the various

levels may take place at the expense of technical progress.

Tolerance as such is only a staging post, a method rather than a strong belief. It becomes a contradiction in terms if it attempts to absolutize what it relativizes by definition.

And yet, after all this has been said, tolerance and strong belief also need one another. Or better, a vigorous and viable modern society needs both. The relationship is not just one of contradiction, but also one of symbiosis. For eight years now I have been involved in international research of my profession. During my term of office as secretary of the sociology of religion research committee of the International Sociological Association I edited a book comparing amongst others the church attendance rates of a large variety of countries (Mol, 1972). If we assume that church attendance rates not only reflect commitment to a religious organization, but also to specific religious beliefs (which may be doubtful), then these comparative statistics showed that the rates are lowest in those countries where there was little or no competition and highest where there either had been, or still was a fair amount of divergence in beliefs. In other words: church attendance tended to be lowest where there was or had been a protestant (Scandinavia) or a Catholic (France, Italy) state church. It tended to be highest in those areas of the world (the U.S.A., Canada) where there was a large variety of religious beliefs and religious organizations. The significant exceptions to this tendency were Ireland, Poland and Quebec, all countries or regions where the Catholic Church had been the historical rallying point against foreign aggressors and conquerors.

The point is clear: when embattled, a denominational, or national identity may thrive as a consequence. The beliefs which reinforce these various identities will do the same and will similarly grow stronger when they have to be defended.

As with any symbiotic relationship: the other partner also profits from association with its adversary. The hollow tolerance necessary for oiling the intricate machinery of a modern industrial societies must persist as a counterbalance to the pockets of strong belief.

The word 'pocket' in the last sentence is important. As tolerance of diversity is a *sine qua non* for the maintenance of the larger social fabric, the deeply held beliefs can only be reinforced in the smaller face-to-face contexts. In a pluralistic society, such as the U.S.A., strong beliefs usually only exist and are consolidated in 'pockets'. Only here the concrete, specific details of the belief-system can be maintained. Only here the individual wholeness and personality integration can be consolidated through communication about the deepest truths.

This does not mean that the national fabric is held together by purely shallow convictions. Yet it does mean that only vague abstractions, such as the goodness of belief as such rather than the specific content of that belief can be held by the entire nation. It also means that only a generally weak 'civil religion' binds the society together. What used to be a very strong, almost militant binding force of the entire American nation, the strongly held belief in democracy, received a severe setback in the Vietnam war, when the sad, but inescapable conclusion had to be drawn that authoritarian regimes under certain conditions can be stronger than democratic ones however superior the latter are technologically. Or to say this more in line with our general argument: the weakness of technological superiority (the necessity to relativize deep meaning

structures) can be turned into an advantage by an astute enemy through the galvanization of identity by a strong missionizing belief-system. The blow dealt to deep beliefs in democracy through the defeat in Vietnam seems to be much more lasting than the rehabilitation of populism which the pundits in their misdirected optimism detected in the Watergate trauma.

In other words: strong national, whole-making, beliefs in democracy as a counterbalance to the cold neutral efficiency of a highly successful technological advance have failed. They have only proved to be useful as an articulate summary of what holds the political subsystem together, but not the heart of the nation.

This is also true for two other major subsystems, economy and science. Here too the strongly held belief in the individual profit motive has proved to be too weak to carry the total social system. The same with objectivity and rationalism. They too have proved to be admirable articulations of what makes the scientific subsystem cohere, but incapable of being more.

Hence the wholesale retreat of liberalism in our day. It used to be a rather utopian adolescent over-confident vision in the combinability of technology, science and belief. It erroneously thought that the rational common denominator could serve as the fitting ideology of the age, thereby making the same mistake which Comte, Spencer and Fraser made in the 19th Century. It understimated both the symbiosis and dialectical gap between wholemaking/identity/belief on the one hand and skepticism/rationality/efficiency on the other. Above all it never understood the inner sophistication of orthodox Christianity as the time-honoured, tried dramatizer of the very dialectic underlying natural and social existance.

It is not accidental that the erosion of liberalism as a viable American belief goes hand in hand with a simultaneous skepticism about democracy, the profit motive and objectivity as cosmic goals and absolutes. They are too brittle and segmental for such a weight. They cannot deal with the entire complement of man's disillusions and frustrations, problems of living and dying, the perpetual imbalances between overestimation and underestimation, arrogance and lack of confidence. The intricate machinery of personal and social wholemaking, the minimization of conflict and the maximization of congruence between personal and social identity cannot be safely entrusted to segmental goals, artificially elevated to cosmic status.

The retreat of liberalism as a failed national belief-system in the U.S.A. has also gone hand in hand with a retreat to the fundamental structures which originally facilitated the rise of capitalism, democracy and science. I refer to the complex of beliefs, sometimes called the Puritan or Calvinist ethic. What to me is salient in this ethic is not so much a doctrine of secular calling (as Max Weber mistakenly emphasized), but the constantly reintegrated, kaleidoscopic dramatization of the sin/salvation dialectic. This sin/salvation theme is equally pre-eminent in the rising evangelical and charismatic movements in the West at the present time.

There is a close affinity between the idea of marginality and the doctrine of original sin. Particularly at times of personal or national upheavals, or particularly when personal or natural identity had become precarious, sin emerged as a major interpretation of the situation (Gross I, 1960, 9). Original sin stood for disobedience (the Fall) and unbelief (John 16, 9).

It is no accident that especially those authors of the Old Testament who were the catalysts for change (the prophets) used sin or transgression as an

aversion from, and an unfaithfulness to, Yahweh. To them it was first and foremost a breaking of the covenant (Schoonenberg, 1965, 8, 67). Order (or the covenant with God) was destroyed through man becoming marginal to that order (sinfulness), but nevertheless identity would be restored (through God's undeserved mercy or salvation). Transgression was the favourite mode of accounting for the traumatic experience of the Jewish exile: the covenant with God had been trampled underfoot — hence the predicament (Nehemiah I).

In the Christian tradition converts and charismatic leaders (St. Paul, St. Augustine, Luther) pre-eminently stressed the idea of sin as crucial for their basic experiences. And again this was not unrelated to the periods of fundamental change in which they lived. Conversion on the personal level and charisma on the social level seem to have always consisted of the desacralization (or emotional stripping) of a phase of sin, alienation, marginality and the sacralization (or emotional welding) of a phase of salvation, belonging, identity. To these converts and charismatic leaders, as to many modern theologians (Haring, 1974, 38), sin is being alienated from God, becoming marginal to His covenant. Salvation is being reconciled to Him and restored to His covenant.

In the Calvinistic, Puritan, Pietist tradition, this theme of sin/salvation (or the dialectic between marginality and identity) did become so prominent that it would be difficult to find sermons in which this theme is *not* basic. There was of course a clear affinity with pre-Reformation theology. Yet to Calvin sin was more than the concupiscence of the Catholic tradition (Troeltsch, 1931, 58). Its individualism was founded 'upon a crushing sense of sin and ... the certainty of election' (Troeltsch, 1931, 58). Man was naturally depraved, naturally inclined to disobey God. He would naturally insist on his autonomy and would naturally disavow God's claim of allegiance.

Similarly the opposite pole (salvation) was not as in Lutheranism 'dependent upon the receptive will of the creature' (Troeltsch, 1931, 583), but on the sovereign will of God.

Crucial from our point of view was (and still is in most sectarian preaching) the giveness of sin (or marginality), rather than its mitigation or modification through man's good deeds, better perceptions or congenial emotions. Marginality thereby acquired a basic ontological rather than relative status.

Similarly with salvation: election and predestination assured that salvation was given rather than aquired. Or to say this in more sociological terms: in spite of its ingrainedness, marginality (sin) could not upset order (salvation), as the latter was ordained rather than achieved.

This meant essentially that order existed independent of, even in spite of, man. Man's marginality thereby became legitimated rather than tolerated and its opposite (order) had to be correspondingly re-asserted to prevent the sin/salvation dialectic from becoming unhinged (Mol, 1974, 282–3).

Although this nutshell account is very much informed by the intellectual sociological/dialectical perspective, the actual religious orientation is populist. The sin/salvation dialectic in Christianity has always been part of the popular, even lower class, sectarian systems of beliefs. It has always been lived, confessed and witnessed to, rather than abstractly analysed. It seems to me that this deep dramatization of the sin/salvation or marginality/identity dialectic is rather important for our understanding of the emergence of Western forms of political, economic, scientific behaviour. Democratic forms of government, the spirit of rational capitalism and empirical modes of scientific

investigation all emerged, or received strong impetus, in those countries where the Protestant Reformation had established a populist base. The latter uniquely combined thorough personal confidence, social responsibility and an almost paradoxical awareness of man's marginality in the totality of existence.

The fit of the ethic in modern times also rests with its stress on sin, or in more secular, scientific language, on marginality. Instead of hollowing its belief-system by eliminating such indigestible items as the cross and the resurrection, man's rebellion and God's forgiveness, and filling it with more palatable items, such as the autonomy of the thinking self, and the goodness of reason, it glories in the very indigestibility of the old tradition. Instead of compromising with the age, it confronts that age. Instead of integrating the social fabric, it deliberately adopts the sectarian stance of speaking about the saved and the unsaved, the minority who adopts God's offer of wholeness and the majority who rejects it.

All this means in sociological terms, that the surging evangelical/charismatic movements of our age adopt the strategically vital position of associating wholeness and cohesion not with nationhood, but with sectionalism (only those who strongly believe in Christ's saving power, for instance) and with individualism (the miraculously saved individual). It realistically only unites what it can unite and never assumes that it can save what is intrinsically unsaveable: the total complex of a modern, highly industrialized society feebly held together by tolerance. It correctly assumes that strong beliefs cannot both be confessed and relativized. And so it separates the context where relativization is a prerequisite from the context where a common commitment is essential.

Unwittingly we have moved from a discussion of the wholeness-reinforcing aspect of strong beliefs to a discussion of the relative merits of the contents of these strong beliefs. We must continue on this train of thought. I believe that the surging strength of evangelicalism in our age is not just the result of a wise strategy, but also of the relevance of its intrinsic beliefs.

The populist, sectarian base for the sin/salvation dialectic should not be confused with an inherent lack of intellectual sophistication of the dialectic. True, the intellectual defense and apology has never greatly interested the ardent proponents of evangelism. Belief and commitment as such are to the evangelicals fundamentally more important than the analysis of those beliefs and commitments. And rightly so. I too think that it is more important to be in love that to talk about love, or to believe rather than take belief apart for scientific reasons.

And yet my task in a university setting and especially in this lecture is to investigate the intellectual sophistication of the sin/salvation dialectic. Or better: I feel that the model of existence represented by the sin/salvation dialectic fits evolutionary data better than the scientific model which assumes that the rational individual is the pinnacle of creation.

I will spend the remainder of this lecture explaining what I mean by this statement. What could sin and salvation have to do with the emergence of the phenomena of nature and society? Why is our painstaken detailed mechanistic linear model of thinking less appropriate for the comprehension of our world? Or better, what are the disadvantages of the assumption that the rational individual is the pinnacle of creation?

In order to make the answer clear I will contrast the paradigm of wholeness and breakdown (or integration and differentiation) actually used by a large

variety of prominent scientists with the often incongruent views the same people have of religious beliefs.

The 1933 Nobel prize winner, Schrödinger, who was as accomplished a physicist as a philosopher, was particularly lucid on the radical and baffling changes taking place in his specialty. To him particles were quanta of energy which had nothing to do with tiny specks of material. They were separated by comparatively large distances and embedded in empty space and what's more, they did not travel in well determined trajectories or circular and elliptical orbits within the atom. "(T)he ultimate constituents of matter have no 'sameness' at all . . . 'sameness' becomes entirely meaningless." No model is true and a completely satisfactory model is even unthinkable (1951, p. 17, 25–6). "(T)he elementary particle is not an individual . . . it lacks 'sameness' (1957, p. 193)".

And yet, once all this has been said, Schrödinger continues in the Greek (and scientific!) tradition of the prodigious search for stability in the flux, recurring patterns in change and order in what verges on chaos. He claims to find this in the organization rather than the material content of the particle. It is the form or the shape (Gestalt) which is permanent. He takes the example of the atom of iron brought into the electric arc and photographed. Unalterably one can observe "tens of thousands of sharp spectral lines . . . definite wave-lengths contained in the light that an iron atom emits at these high temperatures. And they are always the same, so much so that, as is well known, you can tell from the spectrum of a star that it contains certain chemical elements". In other words, the geometrical shape of an atom may be indeterminate, but its organization is permanent (1951, p. 22).

Schrödinger has also some interesting things to say about religion. He thinks that a major function of religion is to round off incomplete understanding and "to close the disconcerting 'openness' of the outlook gained from experience alone" (1954, p. 4). This is certainly a valid insight. Yet Schrödinger fails to extrapolate this observation to his own prodigious search for sameness and wholeness in the chaos of atomic facts. This search is neither structurally, nor emotionally different from the religious search. Also for the natural scientist paradigms tend to become bounded, taken for granted and the secure framework for order.

Schrödinger is attracted by the idea in the Upaniṣads that plurality is appearance, but that oneness is reality. What disturbs him is the Hindu 'salvation by knowledge' which he judges as being "even worse than, or at least as bad as Luther's 'salvation by faith' . . . or Augustine's 'salvation by divine grace' (1964, p. 101)". The implied aristocracy of intelligence and leisure for meditation is equally distasteful to him as the 'sheer lottery of Augustinian election' or Luther's view which similarly downgrades merits and achievements. Again Schrödinger fails to see the link between the Hindu doctrine of oneness or for that matter union with God in Christ and the physicist's search for wholeness and sameness of nature. From the sociological point of view there is a significant congruence between the giveness (rather than the achievement) of salvation (which means 'wholeness') in Christianity and the taken-for-granted order of nature to which the physicist is fully committed.

Yet, to his credit, Schrödinger does not overlook the congruence between the relativization of space and time in Kant, Einstein and modern physics on the one hand and the religious sentiment on the other (1958, p. 87). He would have been more consistent if he had done the same for order in nature and wholeness in religion.

In chemistry the wholeness of chemical structure is broken down in a chemical reaction until a new equilibrium or wholeness is established.

In biology and genetics basic organization centres around the concepts of heredity (stressing the maintenance of structure) and variation (the emergence of something new). Selection of equilibrium is the outcome of the dialectic between wholeness and breakdown of that wholeness, or as Huxley (Tax and Callender, 1960, pp. 122–23) has it "biological evolution always shows a combination of continuity and discontinuity, a compromise between stability and change and an interplay between randomness and directional selection".

In the same field Bertalanffy (1969, p. 74) contrasted the fundamental characteristics of hierarchical organization (integration) and open-endedness (facilitating differentiation and change). Yet the Nobel prize winner Monod (1971, p. 79) is anything but happy over this stress on wholeness formation in biology and genetics. Nor does he like anything that smacks of dialectics: the relationship between DNA and protein is entirely one-way (Monod is wrong here) and thoroughly Cartesian rather than Hegelian (Ibid., p. 111). All vitalists (such as Bergson or Polanyi), all animists (such as Engels, Teilhard de Chardin, Spencer), all religious ideologies, most philosophical systems (Ibid., pp. 24–41) make the fatal mistake of anthropocentrism. They rank direction and purpose (or teleonomy as Monod calls it) ahead of invariance and make it the *primum movens* of evolution (Ibid., p. 41). In actual fact, all scientific evidence points in the opposite direction: invariance precedes teleonomy (Ibid., p. 23, 166). Nature is a gigantic lottery (Ibid., p. 121), because any change in the invariant structures is produced by the accidence and random occurrence of unpredictable mutations (Ibid., p. 114). Nature plays roulette (Ibid., p. 122). "Pure chance, absolutely free, but blind (lies) at the very root of the stupendous edifice of evolution" (Ibid., p. 112). "It is today the sole conceivable hypothesis, the only one that squares with observed and tested fact" (Ibid., p. 113). Yet this very chance is modified because change is canalized and modified. The teleonomic principle directs change towards better chances of survival (see also on this Huxley in Tax and Callender, 1960, p. 213).

Monod is a decided advance over the earlier approaches in biology which stressed emergence and change at the expense of invariance. He is also essentially correct when he implies that specific views of order are bound to man's need for such an order. Yet he is naive on a number of points, mainly those impinging on the social sciences, philosophy and theology. When Monod ardently defends the analytic method and objectivity as "the only authentic source of truth" (1971, p. 169) and complains bitterly that this postulate of objectivity "has conquered its place in society — in men's practice, but not in their hearts" (Ibid., p. 170), he conveniently overlooks that the very marginality implied in the concept of objectivity undercuts integration and wholeness. Objectivity as the inevitable sacred centre in science supremely fosters the very contradiction of sacred commitment: skepticism and the steely coldness of the bisecting knife. Hence its utter failure as a heartwarming device to Monod's most profound regret!

Huxley makes the same mistake. After beautifully summing up what evolution is all about ("a compromise between stability and change"), he refuses to clearly draw the same conclusion about man's symbol systems, because the deified principle of rational knowledge and conscious thought — very similar to Monod's objectivity — would have to be relativized. It would

have to be conceived as a rather partisan factor in a larger context where it is only symbiotically related to wholeness (in turn reinforced by emotion, religion, play and art). And this would mean a coming down from the height of an exclusive explanatory principle. (Huxley in Tax and Callender, 1960, p. 217, 231 and 255).

Monod's analytic bias has a related consequence: if one is unaware of the conceptual and methodological cleavage between analysis and synthesis or differentiation and integration, one is also not very likely to have much time for the concept of dialectic. After all the latter disallows the neatness of thinking about invariance as primary to purpose or about purpose as primary to invariance. Monod's data make more sense if one takes both the logical and the practical cleavage between invariance and purpose, or wholeness and breakdown of that wholeness more seriously and if one postulates a mutual effect, making it impossible for either to return to the previous situation. Mutations affect the genetic code, but the genetic code also affects the limited success of mutations.

Certainly the concept of dialectic or mutual effect of basically conflicting elements makes eminent sense in the social sciences. Biologists and geneticists seem to be often (correctly) unified in their observation that symbols are a further extension of the much slower genetic evolution, but also (wrongly!) unified in their speculations that religion is nothing but a primitive guessing about man's origins. Not only is this view about a century behind the social scientific thinking about religion, but it also assumes that symbols do *not* reflect the dialectical relationship of wholeness and breakdown in nature. There is good evidence for the postulate that religion, art and play represent integration and expressive representation as a counterbalance to differentiation and rational mastery very similar to the wholeness/breakdown dialectic discussed above.

In ecology the issue is also essentially between wholeness and breakdown. *Balance of nature* (the dynamic equilibrium between these two) is the central concept.

In the field a similar debate to the one above is maintained by Gregory Bateson. Like Monod, Bateson takes purpose as one of two major poles. The corresponding pole to Monod's invariance is cybernetic system. Both are essentially concerned with maintenance: the conserving function of DNA in the cell is matched by the self-correcting loop keeping the cybernetic system away from dysfunctional aberrations and maintaining a steady state "by reversible adjustment" (Bateson, 1972, p. 447).

What is Bateson's argument? Whether the system is a cell, an organ, the human body, the ecosystem or society, he says, it is always 'conserving' (Ibid., p. 435). The physiology and neurology of the body conserve body temperature, blood chemistry and the growth of the embryo. In the human mind learning conserves "the opinions and components of the status quo" (Ibid., p. 436). In the tropical forest as many as 10,000 species live together in a combination of competition and mutual dependency. To maintain equilibrium between these organisms all sorts of interactive balances, dependencies and constraints are necessary and these processes have the sort of circuit structure typical in cybernetics.

As over against the stabilizing tendencies of the cybernetic system, Bateson poses 'purpose'. When considerations of purpose enter the picture, he says, a lineal structure is introduced which makes us "blind to the cybernetic

circularities of the self and the external world" (Ibid., p. 451). Conscious purpose may produce a change in a variable "without comprehension of the homeostatic network surrounding that variable" (Ibid., p. 451). Consciousness itself is often organized in terms of purpose: the purpose screens one's consciousness. It thereby becomes "a short-cut device to enable you to get quickly at what you want; not to act with maximum wisdom in order to live, but to follow the shortest logical or causal path to get what you next want, which may be dinner; it may be a Beethoven sonata; it may be sex. Above all, it may be money or power" (Ibid., p. 439–40). This may not be so bad in a more primitive society. But it is bad when these purposes (assisted by sophisticated technology, weaponry, pesticides) "upset the balances of the body, of society, and of the biological world around us" (Ibid., p. 440). Pure, uncorrected consciousness leads to dehumanization. Correctives may be found and Bateson mentions a few: love, Buber's "I-Thou" relationship, arts, poetry, music and religion (Ibid., pp. 452–3).

Bateson has a rather interesting, cybernetic, reason for including religion. He feels that man's mind is immanent in pathways and messages outside the body. The larger context ('God' to some people) consists of an entire interconnected social system and planetary ecology. An appropriate humility accompanies this seeing of oneself as part of this context. Yet some religion is bad. God can be put outside creation and man can think of himself as created in His image. In that case the world can be considered mindless and exploitable. This estimate of one's relation to nature is thoroughly dysfunctional to Bateson. Survival under this framework of thinking is as likely as the survival "of a snowball in hell" (Ibid., pp. 467–8). In other words, immanentism is wholesome, but transcendentalism pernicious. This view is rather widespread amongst the ecologists. Dubos (1972, p. 41) feels that man's salvation depends on his ability to create a religion of nature (a god within). Both Bateson and Dubos follow the influential historical views of White who convincingly shows that in the Judaeo-Christian religions, man is generally set apart from nature. The latter also advocates a return to the humility of St. Francis (Lynn White in Dubos, 1972, p. 155).

Yet these views are rather naive. Using Bateson's own cybernetic argument one can build a good case for transcendentalism. For instance, one can think about the Calvinist stress on God's otherness as the provision of a point of reference for the extension and subsequent stabilization of new cybernetic systems. All the changes (or marginality producing forces, Mol, 1974) of the later Middle Ages and Renaissance (printing, individualism, discoveries of the Americas, increase in trade, the mounting influence of an urban money economy) could be absorbed back into a balanced theological system, precisely because man's marginality (or sin) was constantly reconciled by the towering, decreeing (ordering), but also loving and saving (whole-making) Jehovah. It is Max Weber's basic argument that the subsequent capitalistic development (one could also add, political/democratic and scientific/objective development) would not have had the vigour, if it had not been for the Calvinistic/Puritan ethic. All this can be translated in cybernetic terms: change, new inputs from the environment could be successfully fed back into the system because the homeostatic control (Bateson's example of the governor in the steam engine is appropriate here) allowed for sufficient latitude, precisely because God was *not* immanent but transcendental. It was the transcendentalism which provided both the necessary catalysis for change

and authority over the wholeness to render the change innocuous. Immanentism on the other hand is too much preoccupied with homogeneity (or 'determinism' as Bateson [p. 473] calls it) to integrate the change adequately. Transcendentalism is to immanentism as deocentricity is to anthropocentricity. or evangelicalism to liberalism, as heterozygosity is to homozygosity or outbreeding to inbreeding. In a changeable environment the first item has greater survival ability.

Behaviour in general and animal behaviour in particular also illustrates our theme that the maintenance of a complex organization is constantly embattled by forces which successfully or unsuccessfully attempt to change its integrity. Instinct preserves the organism by swift reaction to danger. At a further stage learnt behaviour preserves even better through more subtle and flexible manipulation of the environment. Banding together is a further response to the need for adaptation. Here all ethologists agree. Where there is less application of the dialectical relation is in the ethological thinking about individual and group. A good example is the treatment of aggression in the literature. Ethologists generally seem to overlook that aggression tends to have an individual referent and sociability a social one. Both drives can be arranged in a hierarchical set of priorities. Yet this hierarchical arrangement is part of a new and separate whole without which the set of priorities is irrelevant. Thinking too much in terms of symbiotic relations of traits within the individual runs the risk of too much linear (as against dialectic) evolutionary thinking. It is only partly true that evolution is inexorably moving (or must move) to greater containment of aggression and more sociability. It seems somewhat closer to the truth that similarly to particles changing characteristics for the larger whole, or cells surrendering part of their independence to the organism, individual animals suppress innate aggressiveness for the sake of the group.

Cooperation and sociability therefore should be considered in terms of their contribution to the cohesion, or their reinforcement of the wholeness, of a non-individual, social identity. The strength of the super-ordinate organism can be measured by its capacity to regulate aggression: maximization for external and minimization of internal purposes. It is a contradiction in terms to advocate this regulation with the individual as the basic unit.

The relation between individual and group can be both complementary and conflicting. Linear thinking cannot do full justice to the comprehension of this phenomenon. The relationship between these wholes is not necessarily one-directional: from conflict to congruence. In our day there seems to be less congruence as compared with the *Germeinschaft*-type tribal societies, even through both the major ethologists and sociologists agree that there should be more for the sake of man's survival. In times of less rapid change a reversal from congruence to unit independence is quite feasible. Yet in times of great changes only greater social cohesion can modify the individual aggressive instinct and consequently social wholeness should be the focus of evolutionary thinking.

One of the best known, younger ethologists taking this linear, individualistic line of thinking is the pupil of Konrad Lorenz, Eibl-Eibesfeldt. His naivite about religion and society is closely tied to the ethological model he uses. Original sin as a theological doctrine is to him 'untenable' as are repressive guilt feelings. Original sin and the threat of eternal damnation are tyrannic strategies for establishing bonds (1971, pp. 160, 164).

Yet it is precisely by the dramatization of the sin/salvation or breakdown/wholeness dialectic that sociability and social cohesion can advance at the expense of aggression and the brutish war of all against all.

When Eibl-Eibesfeldt moves away from his own field, where he accurately describes the relevance and dominance of instinct and aggression, he makes irrational assumptions, such as that in human affairs reason determines commitments (Ibid., p. 163). Reasonable people make the best possible society. After all progress and development runs clearly from irrationality to rationality, from the self-preserving instinct to sociability, from aggression to enlightened cohesion. Not fear, but reason ("as rational beings we can guide our own future development", Ibid., p. 233) must be the uniting bond in human society. And yet all evidence of atomic, genetic and behavioural investigations is that the whole acquires independent characteristics of the parts and that individual characteristics (and particularly the aggressive instinct) become modified in a viable, cybernetic whole. In human societies guilt feelings, conviction of sin, authority structures have been the traditional means for making the whole viable. All dominance hierarchies repress the aggressive instinct for the sake of this viability and ultimately for the greater adaptability of the human species.

There is tension as well as harmony (or as Eibl-Eibesfeldt has it, 'hate' and 'love') between the variety of identities or wholes proliferating in existence. One can wish the tension away by deifying 'the good', 'reason', 'harmony', as the Greeks did. Yet is is more realistic to extrapolate from ethological investigations that the intersecting wholes and identity boundaries clash and compete as well as cooperate and that the conflict is even a prerequisite for segmental wholeness.

Eibl-Eibesfeldt is aware of this when he writes that cohesiveness of human groups has been strengthened by a common danger, yet to achieve identity via aggression (and defense?) is dangerous (Ibid., pp. 160–2). He therefore fails to understand the sophistication of the Judaeo-Christian sin/salvation, chaos/order model as a portrait of what constantly takes place in existence: a battle between crosscutting wholenesses, the outcome of which is only certain at the end of time when salvation, wholeness, or order will be re-established.

In this model there is little room for the utopian dream of reasonable men living together in harmony, overcoming their aggressive instincts for the common good.

Continuing this sideline about the theological implications of ethological research on the social instinct: Edward O. Wilson (1975, p. 561) is much less naive than Eibl-Eibesfeldt in that he relates religion to the certification of the vital group interests. Yet he fails to see that rites of passage are more than a change of classification, as he defines them. They are essentially the stripping of an old identity and the welding of a new one in such a way that tribal wholeness or social identity is essentially safeguarded. There is a parallel here with the incorporation of change in a stable behavioural repertoire of animals.

Similarly with magic, which to Wilson is an attempt to manipulate nature. Yet anthropological literature discusses the latent provision of confidence by magic. Instead of manipulating nature, magic can be seen as a reinforcer of personal identity. Magic and religion strengthen wholeness or make change innocuous by incorporating it in wholeness rather than aim at manipulation. Here too there are more parallels with ethology than Wilson assumes there to be.

A third widely known ethologist who comments on religion is the Cambridge scholar W. H. Thorpe who in the 1969–1971 Gifford Lectures said that only science can be a "basis for a reasonably grounded natural theology" (Thorpe, 1974, p. 382). To him the scriptural theology of relevation of Karl Barth and Reinhold Neibuhr is disastrous. Thorpe also fails to recognize that it is precisely the scriptural theology of revelation which has traditionally and constantly dramatized the conflict between brokenness and wholeness, sin and salvation. On the level of symbol-systems and human existence, this dialectic is as crucial as it is for the scientific understanding of animal behaviour and biological complexities. The problem is that scholars find it impossible apparently not to deify their own assumptions. These assumptions may provide suitable modes for a comprehensive understanding of the non-human world, but they become dysfunctional when they take the side of the change/rational/objectivity model without recognition of the fundamental dialectic with the wholeness/expressive/commitment model in human existence.

Can we trace the wholeness/breakdown theme also on the level of symbols? Two philosophers who are very much aware of two major, contrasting kinds of symbolism, reminiscent of our dialectic, are Ernst Cassirer (1874–1945) and his pupil Susanne Langer.

Cassirer was interested in reconciling scientific and aesthetic symbolism. Art portrays a new whole, a new total image of reality and the cosmos (1923, p. 328). Science leads to stabilization and consolidation of perceptions and thought. Like the Archimedean point it fixes the point of rest in a changeable universe. He agrees with Kant that through objectivity science provides synthetic unity. It seeks order in phenomena (1954, pp. 207–9). It was Langer who most clearly articulated the essential differences between the two. To her, discursive symbolism is closely tied to language. In language ideas have to be strung side by side (1951, p. 66). This is the mode in terms of which science operates. One proposition follows the other. Forms of reason underlie both commonsense and science. By contrast presentational, or non-discursive symbols do not operate successively, but simultaneously (Ibid., p. 75). They 'are understood only through the meaning of the whole, through their relations within the total structure (Ibid., p. 78)'. They articulate 'unspeakable' things. They do what language cannot adequately do: express our emotional nature (Ibid., p. 81). Art forms are examples of presentational symbolism, metaphors of feeling and emotion in contrast with scientific symbols (Ibid., p. 180 ff.). The unity of a work of art is shown in a dialectical, rhythmic pattern, in an interplay of identity and diversity of forms (Ibid., pp. 204–206). Like myths, art forms are closely linked to the forms or Gestalten of fantasy and dreams (Ibid., pp. 139, 168).

Both Cassirer and Langer are ambivalent about religion. To Cassirer myth and religion are prelogical. Science has surpassed them both and represents the culmination of reason. In his admiration for scientific symbolism he neglects the predominant analytic, coldly bisecting, marginality inducing, mode of science and comes close to confusing it with a unifying religious experience. Cassirer also confuses the faith or asumption of science (that one can take order for granted) with what science does (observe and analyse). Art represents a medium in its own right, under no necessity to justify meaning in discursive terms. It can happily confine itself to the pure image. However religion cannot equilibrate the opposition of meaning and image (1955, p. 260). And Cassirer implies that therefore it must be in limbo.

Langer refers to religion in her later work in the same breath as animal devotion to superior beings. It is like the baboon's frantic grooming of the alpha-animal in response to the latter's threats or bites. "All primitive divinities are terrible as well as protecting demons" (1972, p. 303). And these unrealistic hords of ghosts, monsters, spirits and primitive divinities were a real hazard to man's survival and were a weakening influence on a stock departing so radically from the normal primate pattern (Ibid., pp. 342–3).

In her earlier work on the other hand, Langer provides more substantial observations. Here religion is described as "a gradual envisagement of the essential pattern of human life" (1951, p. 126). "The symbols of Life and Death, Sin and Salvation provide reality with intrinsic meaning (Ibid., p. 235). Yet this is only true for earlier periods of man's existence when abstract reason was not on the stage yet to provide in the need for meaning. Christianity used an opportunity at the end of Hellenism because philosophy was not up to much. Deep-rooted philosophical thought cannot flourish in a climate of emotional fires and footloose capriciousness (Ibid., p. 7). "Theology . . . has simply been crowded out of the intellectual arena and gone into retreat in the cloistered libraries of its seminaries" (Ibid., p. 12). Under the old decay of creed and canon the great ideal of personal experience was born (Ibid., p. 13). After all rationality is the essence of mind (Ibid., p. 80). Myth is only a forerunner of metaphysics and science must triumph over religion because the latter "rests on a young and provisional form of thought . . . There must be a rationalistic period from this point onward" (Ibid., p. 165–5).

Both Cassirer's and Langer's views on religion are the direct and logical consequence of a faulty assumption. The assumption (shared by most — or all? philosophers) is that the rational individual is the pinnacle of creation. The assumption is faulty on two counts, one demonstrated by the major and valuable tenets of their own work, the other one inherent in the philosophic downstaging of the social fact as *sui generis*.

On the first: if the two major strands of symbolic forms are presentational (wholeness representing, emotion chanelling) and discursive (analytical, serial, rational forms of propositions) then surely the rhythmic, dialectial tension between the two can hardly be resolved or reconciled by the latter. Resolution lies by definition with the integration partner of the symbiotic relationship. In any viable society marginality is absorbed by wholeness, not the other way round. If it were the other way round order would tend to become minimized and change maximized. In other words: as rationality advances change and subverts tradition and the stability of belief systems, it cannot possibly be the goal of an ordered universe.

On the second: order would also be countermanded if society were only an epiphenomenon of the individual. Both society and the individual represent conflicting, but also congruent 'wholenesses'. Here there is a symbiotic relationship between partners equal to one another. A society in which the individual is nothing but a cipher will succumb to its own petrifaction. Yet a society in which individualism is not contained will succumb to the opposite: anomie and centrifugality.

This means that we have to improve on the faulty assumption by stating one that is closer to the facts of evolutionary dialectics and individual-social relationships. Our basic model is such an assumption. It assumes: (1) that wholeness exists on both the personal and social level; (2) that the boundaries

of these wholenesses intersect, the tension providing a moving equilibrium; and (3) that on any level sentiment or emotion rather than rationality provides the cement or cohesion.

If these assumptions are closer to the facts of modern scientific observations, one may speculate similarly that a theological orientation which both motivates and mutes individuals, coopts and constrains groups, reforms and reinforces society is more likely to fit the modern world than one that idolizes the autonomy of the thinking individual. An example is the sin/salvation dialectic of Christianity. It dramatizes the dynamic relationship between God and man, or between the One who has created order (natural and social) out of chaos and the individual whose aggressive instinct tends to jeopardize the very altruism necessary for a viable society. The commitment to, or faith in God who makes whole (saves) and reconciles man's inclination to subvert order (sin) is a further strengthening of this integrating process. On the basis of what we know at present about (a) the evolutionary dialectic between integration and differentiation (or wholeness and breakdown); (b) the aggressive/altruistic dilemma of an ordered society; and (c) the place of emotion and sentiment in whole-making, this theological dramatization is very adaptive in contrast with the faulty assumptions of the rational individual being the telos and purpose of existence.

Before concluding this lecture it may be useful to shortly elaborate on the earlier comparison between liberalism and orthodoxy.

Compared with the more liberal sections of the theological spectrum the orthodox sectarians continue to occupy themselves with the traditional concepts. In contrast to liberalism, the binary oppositions in all the theologizing and preaching of these groups revolve around the themes of sin and salvation. Altogether different terminology may be used. Very concretely Adam, the Fall, Pharaoh, Goliath, the scapegoat, any moral aberration, pork, the tower of Babel, or the crucifixion, may represent sin. Or more abstractly, sin may be represented under the guise of man's disobedience, self-sufficiency, anxiety, predicament, confusion, arrogance, hell, etc. Vice versa, paradise, exodus, Boaz, the Messiah, Moses, God, Mary, the millennium, the resurrection, righteousness, grace, or angels, may represent salvation.

In the manner of Lévi-Strauss (1969, 1970) we may similarly postulate with good reason that in this theologizing and preaching, there is often a hierarchical build-up, for example, from Ruth, the stranger, and Boaz, the native, to the danger of rejection and the desirability of acceptance to the idea that God's work of salvation from man's predicament and sin finds its climax in Jesus Christ, who became sin so that man could be saved. Similar patterns can be detected in most sectarian/evangelical sermons with God or Christ at the synthesizing apex of the argument, or God as the *coincidentia oppositorum* (Simmel, 1959, p. 17).

There are, of course, differences with the primitive myths. There is a much more abstract level of discourse. Concrete modern situations or concretizations of symbols, may be convenient points of departure, but the elaborations can much earlier and much longer take place on a plateau of vague images and thought alone.

Another difference is that the basic underlying theme of sin and salvation deals less with the antithesis of nature (disorder) and culture (order), as Lévi-Strauss (incorrectly?) has it for his myths, than with the theme of order and disorder within culture itself. After all, man's autonomy, arrogance, sin, etc., is

a threat to the social and cultural, rather than to the natural order. It is not nature which is by definition disorderly and chaotic, and culture which is by definition orderly and systematic. Lévi-Struass's intellectualistic bias may show up in his underestimation of the integrating, orderly elements of physical nature and evolution, and his overestimation of its disintegrating, threatening characteristics. We believe that there is a dialectic between adaptation and integration or instrumentality and identity both in the evolution of genetic and symbolic materials.

Sectarian sermons may be as effective as they are because they deal essentially with these basic themes of sin and salvation, disorder and order, rational autonomy and faith (integration). Their effectiveness may also lie in their capacity to anchor this theology in the emotions of their adherents through the note of contagious conviction in praying and preaching. As in mythical narratives, the familiar view of man's place in existence is reinforced in a kaleidoscopic variety of ways and with an impressive array of theological subtleties.

It is through the kaleidoscopic diversity, and yet the underlying similarity, of the dialectical theme, that sectarian preaching differs from its liberal counterpart and even more radically from, for example, the scientific analysis of religion. In a simple-minded, direct, parsimonious fashion, scientific analysis regards its job as done, once the basic truth has been clarified and presented. The distinctiveness of myth and of sectarian preaching lies in their constant reiteration of a basic truth with whatever variations of the narration. Myth in particular, and religious activities in general, always reinforce definitions of reality. The scientific analysis of religion does the opposite: it hesitatingly builds up an argument, ready to surrender or qualify the 'tentative' truth at any time.

To summarize the latter, major part of this lecture: the content of a viable fundamental belief cannot stray too far away from a congruent model of nature and society. I have therefore attempted to compare the heart of some basic scientific paradigms with the heart of orthodox Christianity. What I have done I could maybe express in a different way. Actually the congruence lies in what may be called 'harnessed chaos'. Things survive because they are ordered wholes, in spite of the precariousness of any wholeness. Yet it is precisely the precariousness and the constant bombardment of that wholeness by elements which undermine its integrity which has made for a variety of levels of 'harnessed chaos'.

These levels overlap, but are nevertheless clearly distinguishable. On the most primitive of levels, the organisation of an atom depends on the maintenance of a certain temperature. The wholeness of an atom is therefore not any less conditional than the wholeness of the gene on the next level. Here mutation is both a challenge to conservation and heredity and an opportunity for obtaining a better ecological niche.

A third level of 'harnessed chaos' in the form of instinctive behaviour is built on the previous levels. Here too wholeness is anything but secure. It remains only intact so long as superior, more subtle (learnt) behaviour patterns leave it alone. And yet in the same way as grass is at the mercy of the cow, so the cow is at the mercy of man who has learnt to domesticate animals.

This is then the fourth level: the elaboration of symbols and the opportunity they afford for an intricate division of labour, a sophisticated network of communications and greater mastery. Here too, both wholeness and change

are precarious, because they both oppose one another and yet depend on one another. Adaptation and the occupation of a safer niche in the environment led to increasing complexification of symbol systems. Yet the matrix for this proliferating complexification (culture) was always conservative, so that change could never get out of hand, but be encapsulated back into the stable frame of reference.

Society (any society) is not any less precarious than the other levels of existence we have investigated. It may succumb to too much change or not enough. It may be too well integrated, so that it becomes ossified and dangerously diminishes the capacity to cope with change. Or on the other hand it may fall apart because it cannot absorb change in the existing framework of meaning. Here too therefore the dialectic as such becomes of overall importance.

Religion is an important balancer in any culture. It contributes to wholeness by its insistence that order was created out of chaos and that salvation juxtaposes sin. Through the commitment to strong beliefs it balances the potential for breakdown in culture and personality. It will prove to be all the more relevant and powerful when these beliefs are congruent with basic cosmic processes.

The advantage of the model of thinking here presented is that it seems to fit the existing data of our world. In addition it is a roomier model than the one which assumes that the rational individual is the pinnacle of creation. It is roomier because it allows the non-rational, or feeling an equally important place as the rational. It also does not confine the larger social whole to the merely epiphenomenal status of the individual. The model also does greater justice to interaction and interdependence than the simpler mechanistic, linear way of thinking about nature, life and society.

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