A theory of human behaviour and of the political process

Vree, J.K. de

Mueller, Dennis C., Robert D. Tollison, and Thomas D. Willett: The Utilitarian Contract: A Generalization of Rawls' Theory of Justice, *in: Theory and Decision,* vol. 4, 1974, pp. 345-367
Nagel, Thomas, Rawls on Justice, *in: The Philosophical Review,* vol. 82, 1973, pp. 220-234
Nozick, Robert, *Anarchy, State, and Utopia.* New York, 1974
Pattanaik, P. K., Risk, Impersonality and the Social Welfare Function, *in: Journal of Political Economy,* vol. 76, 1968, pp. 1152-69
Perelman, Ch., De la Justice (Brussel, 1945), *in: Justice et Raison.* Brussel, 1972, pp. 9-80
Perelman, Ch., et L. Olbrechts-Tyteca, *Traité de l'Argumentation,* la Nouvelle rhétorique, Brussel, 1970 (2e druk)
Pettit, Philip, A Theory of Justice?, *in: Theory and Decision,* vol. 4, 1974, pp. 311-324
Rae, Douglas, Maximin Justice and an Alternative Principle of General Advantage, *in: The American Political Science Review,* vol. 69, 1975, pp. 630-647
Rawls, John, *A Theory of Justice.* Oxford, 1972 (1971)
Rawls, John, Reply to Alexander and Musgrave, in: *Quarterly Journal of Economics,* vol. LXXXVIII, 1974, pp. 633-655
Rescher, Nicholas, *Distributive Justice;* A Constructive Critique of the Utilitarian Theory of Distribution. Indianapolis, 1966
Schuyt, C. J. M., *Rechtvaardigheid en effectiviteit in de verdeling van de levenskansen.* Een rechts-sociologische beschouwing. Rotterdam, 1973, Universitaire Pers Rotterdam
Schuyt, C. J. M., John Rawls en de theorie van de rechtvaardige samenleving, *in: Algemeen Nederlands Tijdschrift voor Wijsbegeerte,* jrg. 66, 1974, pp. 160-173
Schwartz, Adina, Moral Neutrality and Primary Goods, *in: Ethics,* vol. 83, 1972-73, pp. 294-307
Sen, A. K., *Collective Choice and Social Welfare.* San Francisco, 1970
Sen, A. K., *On Economic Inequality.* Oxford, 1973

A theory of human behaviour and of the political process [1]

by Johan K. de Vree

> For REASON, in this sense, is nothing but *Reckoning* (that is, Adding and Subtracting) of the Consequences of generall names agreed upon, for the *marking* and *signifying* of our thoughts; . . .
> (Thomas Hobbes, *Leviathan)*

1 A behavioural, formal, and utilitarian theory . . .

The purpose of this essay is to enquire into the mechanism of the political process, and to find out when, how, and why it produces an outcome – any outcome. As politics is in all cases a matter of the actions or inaction of individual men and women, the analysis will have to rest upon an articulate theory of human behaviour – to be sketched in section 3. For the sake of precision and clarity, but also of testability and adaptability, the theory is to be an axiomatic one and to be cast in mathematical language, whose character will be briefly described in section 2. The theory is firmly connected to an old, yet vigorous tradition in psychology, political science and economics, *viz.* that of 'utilitarianism' and 'political economy'. It may be said, then, to represent a 'behavioural', 'formal', and 'utilitarian' theory of politics. In order to forestall any of the misunderstandings to which these labels so easily give rise, as well as to provide a better idea of what to expect, I will begin by briefly discussing each one of these aspects separately before dealing with more substantive issues.

The political theory to be presented here is a *behavioural* one in the sense (and only in the sense) of being built from an articulate theory of individual human behaviour. Now it should be recognized that this is *not* automatically valid, nor logically necessary. There is nothing in the nature of politics which would really *force* us to start enquiry from the human individual. For politics, and social affairs generally, are normally concerned with larger social groups and aggregates. These often seem to exert a decisive influence upon the human individual, rather than the other way around. Accordingly, one could just as well argue for *their* theoretical 'primacy', *i.e.,* for the necessity of taking *them* as a starting-point instead of the individual. In principle, then, a *holistic* approach is just as defensible as an *individualistic* one.[2]

In actual scientific practice, though, it proves to be not so easy to consistently apply a holistic or collectivistic mode of analysis and to formulate testable and applicable axioms or laws about the 'behaviour' of social wholes. In fact, not one specimen of a well-developed holistic social theory has been actually developed as yet (I am not speaking here about such things as 'analytical schemes' or 'frameworks', or 'pre-theories' or 'paradigms' and 'approaches', or by what other names such more or less programmatic structures may be called in the social sciences, of course). And to the extent that this approach does indeed seem to 'work' in such relatively weak theoretical forms as systems-analysis, structural-functionalism, or Marxist social analysis, closer scrutiny invariably reveals that what makes them 'work', even if badly, are again typically individualist assumptions. That is, such approaches, too, turn out to be based upon certain ideas as to how the human individual behaves and what motives or interests drive him. That such assumptions usually remain implicit only, and that they are indiscriminately applied to the 'behaviour' of social groups, classes, and states, as well as of individuals does not yet make such 'theories' really holistic, in spite of superficial appearances.

On the other hand, social and political life *are* ultimately made up of acting and interacting human individuals. True, collective occurrences, developments and movements do quite often exceed the measure of the human individual – temporally, geographically, and psychologically. More often than not being un-foreseen, un-willed, and un-controlled by individual man, it is *they* which shape and control the individual who cannot but adapt to them. Still, world wars and great revolution, the growth and decline of social and political orders, of empires and of civilisations, in short every transformation of life and society, however deep and fundamental – it is all produced by multitudes and generations of individuals, even if mostly unawares and unwanted.

This demonstrates at least that the connection between the individual and the collectivity or social life generally cannot be a very simple or straightforward one. It means in particular that the theory cannot be individualistic in the sense of treating politics and social aggregates *on the analogy of,* or as *modelled upon,* individual behaviour, as in *Plato's* and *Hobbes'* imagery of the state as 'an individual-writ-large'. After all, an individual's behaviour represents but one element from which social life is built, and which is fed into the political process. And althought it is *based upon* or *derived from* individual behaviour, the political process turns out to obey its own particular laws and rules. Conversely, the recognition of the special nature of the political process also brings us to the insight that it, in its turn, very much determines the behaviour of the individual. The approach taken here is thus perfectly suited to identify both the great differences between the realm of the individual and that of the collectivity, as well as their mutual relationships.

In calling the theory a 'behavioural' one, it should be sharply distinguished from the psychological doctrine of 'behaviouralism', as embodied in such scholars as *Watson, Guthrie, Skinner,* and *Hull.* That doctrine rather dogmatically forbids (or, perhaps forbade) the introduction of any scientific notion or conception not immediately definable in terms of observational statements. However, the validity of, and justification for, any scientific construction whatsoever resides in the function it fulfils in explaining empirical reality.[3] This does indeed require that it is unambiguously and consistently linked to observational statements, but whether this occurs in a direct or indirect fashion is totally unimportant. Besides, and contrary to the philosophy underlying the doctrine, observations and empirical reality are not given us once and for all. Rather they, in their turn, are largely determined by the nature of the theoretical constructions one chooses to develop.

The present theory should also not be automatically identified with the so-called 'behavioural approach' in (American) political science, as developed or propagated by such scholars as *Easton, Eulau, Verba, Truman, Dahl,* and *Almond,* to mention only these. Born as a protest against earlier institutional, literary, or even metaphysical 'methods' and analyses in political science (it has even been called a revolution . . .), it seems to have gradually grown to refer to the effort to generate relatively rigorous and testable theories.[4] That is, it has become indistinguishable from empirical science as such. Such labelling, however, is not very informative; it suggests differences and distinctions which are really nonexistent and irrelevant, and can only lead to another round of quasimethodological controversy and debate -endless precisely because it is empty.

Of course, the present theory, too, seeks to produce definite and unambiguous knowledge about empirical reality. That is, it is to result in propositions whose theoretical as well as empirical meaning and relevance are unambiguously clear. That is why it has been developed in a fully axiomatic fashion, and has been cast in terms of a mathematical formalism. It is only by explicitly formulating one's assumptions or axioms that any transparant, hence controllable and testable, argument becomes at all possible. It is only thus that their consequences and implications, but also their errors and inconsistencies, can be brought to light. It is of the essense of an axiom that it is 'creative', that is, roughly, essential to the construction of any valid argument at all. This distinguishes axioms from the concepts introduced by mere definitions. A definition is merely a terminological convention and can always be omitted and avoided by substituting the *definiens.* But, for that very reason, it is inessential to any substantive argument.[5] By the same token, however, it is only by formulating (empirically interpretable) *axioms* that an empirically relevant and interesting argument can be produced at all.

Conversely, the currently dominant concentration upon the formation and elaboration of concepts in the social sciences, to the neglect of the precise and explicit formulation of substantive axioms, which is a remnant of Medieval Aristotelianism, can hardly result in more than linguistic games. It is the root cause of the failure, and the empirical as well as theoretical emptiness and irrelevance of the vast load of 'frameworks', 'schemes', 'approaches' and 'paradigms' under which post-war social science suffers.

Theories may be formulated in any language, including that of everyday life. There is, then, no intrinsic reason why a special formalism such as that of a mathematical theory should be applied. What *is* necessary, though, is that it should in all circumstances be possible to identify the meaning, scope, and consequences of particular propositions, to differentiate all theoretically and empirically relevant shades and nuances in meaning and reference, however subtle, and to determine the logical as well as empirical truth or falsity of arguments and statements. The greater the scope of the theory, and the more complex it grows, the more difficult it becomes to make the requisite judgments and decisions, to accomodate its growing sophistication and complexity, and to keep a clear picture of the whole. Our natural languages progressively prove to be too clumsy, ambiguous and unwieldy in such circumstances; the application of a special mathematical language becomes ever more necessary instead. For the latter typically combines a much greater degree of rigour with greater subtlety and adaptability – which is precisely what is called for in such circumstances.

It is not surprising, then, that the development of science is at the same time marked by an increased measure of mathematization or formalization: as *Kant* argued, 'there is to be found only as much of science *proper,* as can be found therein of mathematics'. Still, the need for, and justification of, the application of mathematics resides in pragmatic considerations even though it is *scientific* practice with which they are concerned. And although its application is extremely important for the progress of science and for the generation of new ideas, mathematics does not, in and by itself, produce such progress and ideas. The value, relevance or interest of a theory is determined by the substantive ideas upon which it is based, not upon the formalism in which it is expressed; and where such ideas are absent, no amount of mathematical rigour can make up for emptiness and irrelevance – instead of the purely linguistic exercises mentioned a little while ago, we would merely have purely mathematical exercises, but whose *mathematical* interest is not even assured . . .

This brings us to the third, 'utilitarian' or 'economic', aspect of the theory, as the scientific tradition referred to by these terms is also one in which mathematical formalization has been developed most . It is also characterized by

its being built upon or around the notion of *utility* in its explanation of human action – as is the present theory. In a sense, this approach is already to be found in such thinkers as *Spinoza, Cumberland Hartley, Beccaria, Priestly,* and *Helvetius,* among others; and classical Utilitarianism, notably that of *Jeremy Bentham,* applies it in a predominantly normative and prescriptive fashion. More recently we find it in the psychological literature on 'decision-making', which is concerned precisely with the mechanism of human behaviour.[6] It has always been characteristic of the science of economics, and via the so-called 'economic' analysis of politics,[7] proclaimed by some as the 'new politcal economy',[8] it has found its way into political science. Although the term 'utility' itself does not play such a prominent rôle therein, so-called exchange theory, too, is quite familiar to this general mode of analysis.[9] It is obviously out of the question to discuss this entire tradition in depth here. Yet it is useful to briefly indicate a few of the more important differences between it, or its 'mainstream', and the present theory.

Thus, to begin with, the present theory will not be restricted to so-called 'rational' behaviour, nor, in spite of its utilitarian language, to conscious and consciously calculated action in which the agent is fully aware of the alternatives before him and their associated 'costs' and 'benefits'. Obviously, this means a significant gain in generality – the theory is to apply to any action whatsoever, rational and irrational, good and bad, social or anti-social, healthy or perverted, conscious or unconscious. In view of actual social and political practice, it is rather difficult to see how any other theory could be politically relevant . . . This implies, among other things, that the present theory will not be restricted to peaceful behaviour or peaceful political settings and developments. In view of the strong tendency to so limit 'economic' or 'exchange' analysis, it may usefully be emphasized that violence is fully integrated into the present theory. After all, from a scientific point of view it is merely one form of behaviour or political process among others.

The tradition referred to here also exhibits a strong tendency to limit analysis to democratic political processess and occurrences in which decisions are made or outcomes produced by means of some sort of voting arrangement. This is not merely because the analysts themselves tend to come from democratically ruled countries, nor because democracy were an empirically dominant political form. On the contrary, only a tiny fraction of historical and contemporary political systems and decision-making processess can be so qualified. The real cause for this preoccupation seems to lie deeper: in the democratic case the mechanism of the political process itself is (or *seems* to be!) clear and can accordingly be taken for granted. And while such analysis may be enlightening enough, it is no substitute for a general analysis of how political processes produce their outcomes.[10] And one may well doubt

whether an adequate understanding of *democratic* politics were really possible in its absence. The theory to be developed here, then, is concerned precisely with this problem of the political process, and not, in any fashion whatsoever, restricted to some special sort of politics, democratic or otherwise.

Finally, this theory can be called an 'economic' one, at least much of the tradition here referred to has been so called. The reason for this is an *historical* one, namely that this sort of analysis has been developed first and most in the discipline of economics, while its application to politics has been predominantly the work of professional economists.

Theoretically, however, the relationship appears to be quite different. For, as will become clear in the sequel, far from politics constituting a sort of special case or extension of economics, economic processes and transactions turn out to be but marginal instances of political ones. They are *marginal* in that they rest upon rather special and very restricted assumptions about human preferences, as embodied in the economic motive and the construction of economic man, for instance.

Surely, one will not think that I am here seeking to decide questions of academic precedence! For, after all, whether a theory or even a discipline be called 'economic', or 'political', or 'sociological', is a mere matter of words, from a scientific point of view. And just as 'politics' is here being construed very widely, in fact, covering most or all human interactions and social processes, so one might well extend the domain of the economic. Thus, the object of economics is sometimes defined as such human behaviour which employs scarce and alternatively applicable means.[11] Except for its exclusive concentration upon behaviour rather than interaction and process one may well agree to this definition, but it is difficult to see what behaviour were to be excluded by it! This again underlines the relative irrelevance of such disciplinary names. Politics, and economics, but also sociology and (social) psychology, to mention but these, are shown to share a centrally important and quite extended domain of common and identical problems. Our problem is to try to solve them, to develop an adequate theory about them – irrespective of any traditional *academic* (rather than *theoretical)* boundaries.

2 Formalities

In seeking to avail ourselves of the great advantages of mathematics, we are at once faced by the perennial problem of measurement. As most relevant things in the realm of human affairs cannot be measured in the same strong way as in physics, mathematical social and political science seems to be an impossibility. For what is relevant and important cannot be measured, and what can be so measured is trivial, as the saying goes. This, however, is to

construe measurement in a much too narrow fashion. For, the comparative judgments, of 'more-or-less', of 'greater-or-smaller-than', 'earlier-and-later-than', and so on, upon which most of our daily (mostly succesful!) actions rest, equally represent measurement, be it of an ordinal nature. And, most importantly, its mathematical character can be just as clearly and unambigiously defined as that of any other form of measurement. Of course, one cannot straightforwardly apply the common arithmetical operations such as addition and multiplication to such measurements. For these have been defined in terms of *cardinal numbers,* whereas ordinal measurement can naturally result in *ordinal* numbers only. And if we do wish to be able to meaningfully manipulate and combine such merely ordinally ordered entities in more or less similar ways, we will have to expressly define adequate notions and operations, as well as formulate the axioms which govern their behaviour. All this comes to a definition of the mathematical syntax of the theory allowing for an unambigious determination of the formal properties, implications and limitations, of what is to be said in and by the theory, even though based merely upon ordinal measurement.[12]

We are faced, then, by two tasks. The first is to identify the mathematical properties of ordinal judgments – what does it mathematically mean to say that x is greater than y? But in many cases, both in scientific and in everyday discourse, we also meet with more complicated propositions and judgments. Thus we say that the addition of new members strengthens a political party, or that the defection of Greece or Turkey would weaken the power of NATO. While such expressions surely seem to be meaningful enough, they are also a bit peculiar in that they seem to involve notions of 'adding' or 'subtraction', even though the relevant notions ('strength' and 'power', respectively) are presumably of an ordinal nature only. Similarly, we often speak of the addition of benefits or sacrifices rendering certain courses of action more or less attractive, although these notions, too, cannot as yet be measured in any but an ordinal fashion. Apparently, then, there is sense in employing such operations as ordinal addition, whose exact nature, however, must be carefully determined. This is our second task. As there can be no question of describing all this in detail in this section I will limit myself to mentioning the main notions and axioms, adding a few brief clarifying remarkt only when this seems unavoidable.

The relation of dominance is taken as a primitive here, and will be denoted by the well-known symbol '>'. As it can be interpreted in several ways, a special subscript will sometimes be added to it when misunderstanding is possible. It is in alle cases assumed to be irreflexive and transitive in a 'positive' as well as a 'negative' fashion (see figure 1).

It is especially the assumption of transitivity which tends to cause much diffi-

Figure 1:

Af-1 $\dot{\sim}\ (x > x)$ irreflexivity

Af-2 $(x > y) \,\&\, (y > z) \rightarrow x > z$ 'positive' transitivity

Af-3 $\dot{\sim}\ (x > y) \,\&\, \sim (y > z) \rightarrow \dot{\sim}\ (x > z)$ 'negative' transitivity

The relations of equality and of equality-or-dominance can then be defined as follows:

Df-1 $x < y \leftrightarrow y > x$

Df-2 $x = y \leftrightarrow \dot{\sim}\ (x > y) \,\&\, \sim (y > x)$

Df-3 $x \geqslant y \leftrightarrow (x > y) \vee (x = y)$

The subscript 'π', as in '$>_\pi$', will indicate a relation of preference. Similarly 'ϕ' refers to probability judgments, as in '$>_\phi$' which indicates the relation 'more probable than'.

culty, as it seems to require a measure of knowledge and consistency of human judgment which is truly superhuman. In practice, though, human judgment will often fly in the face of the axioms as when it is observed that *x* exceeds *y*, which exceeds *z*, which exceeds *w*, which exceeds *v*, but which, in its turn, exceeds *x* again. Now it is out of the question to discuss the problems posed by these non-transitivities in full here. Suffice it to say that the possibility of their *empirical* occurrence must be admitted, of course. But, contrary to what is often thought, this does not all argue against the axiom of transitivity itself, which is a *formal* matter only. Rather, when non-transitivities occur, they will pose *empirical* problems for human judgment and behaviour as they are quite uncomfortable. And it is precisely the axiom(s) on transitivity which show why. For it follows from them that

Figure 2:

$$(x > y) \,\&\, (y > z) \,\&\, (z > x) \rightarrow x = y = z$$

In other words, non-transitivities render discrimination and choice impossible; they reduce the measure of order in a set to zero. This is most inconvenient for thought and action – remember *Buridan's* apocryphal ass! It is only too natural that they will occasion changes in such judgments, so as to achieve a more adequate and practical ordering. Non-transitivities, then, are of eminent learning-theoretical importance! Rather than trying to argue them away, then, they should be gracefully admitted. And in all cases it is precisely the formal axioms on transitivity which their empirical (learning-theoretical) importance to light.[13]

By using the primitive '0', we can proceed to define the operation of ordinal subtraction, as follows

Figure 3:

Df-5 $x - y > 0 \leftrightarrow x > y$

This clearly shows the relatively 'weak' (but mathematically definite) character of the operation. In addition '-x' is defined as

Df-6 $0 - x = -x$

The operation is governed by the following familiar axioms:

Af-4 $x - y - z = (x - y) - z$

Af-5 $x - (y - z) = x - y - -z$

Af-6 $x - 0 = x$

Af-7 $x - x = 0$

We can also define the operation of ordinal addition:

Df-8 $x + y = z \leftrightarrow x = z - y$

Finally, it proves to be useful to introduce the operations of ordinal multiplication and division, thus:

Df-10 $x \,.\, y > 0 \leftrightarrow \{x > 0 \,\&\, y > 0\} \vee \{x < 0 \,\&\, y < 0\}$

Df-11 $\dot{\sim}\ (y = 0) \rightarrow \frac{x}{y} = z \leftrightarrow x = y \,.\, z$

The operations are to be ruled by the following axioms, employing the calculus' 'third primitive, '1':

Af-8 $x \,.\, (y + z) = (x \,.\, y) + (x \,.\, z)$

Af-9 $x \,.\, y = y \,.\, x$

Af-10 $(x \,.\, y) \,.\, z = x \,.\, (y \,.\, z)$

Af-11 $1 \,.\, x = x$

3 Human behaviour: a matter of choice

Every human action, or 'inaction', or 'non-action' for that matter, shall be *defined* as a choice from a set of behavioural alternatives or *behavioural set* (Du.: gedragsset). See figure 4.

The central problem of a behavioural theory has thus been defined to be that of estimating, or, rather, predicting and explaining the relative (and ordinal) choice- probabilities.

The first step in that process, for a process it is, and a relatively lengthy one at that, consists of an axiom, *S-1*,[14] which does not as yet express very much more than the rather common sense idea that the 'better' or 'more attractive'

Figure 4:

D-1.1 By the behavioural set of an individual, I, in a situation, s, or $B^{I,s}$, will be understood the set of behavioural alternatives $b_i^{I,s}$ from which a selection is in fact made by I in s. Or

$B^{I,s} = \{ b_i^{I,s} \}$

$b_i b_j \varepsilon B \rightarrow b_i \cap b_j = \emptyset$, i.e., alternatives are non-overlapping,

and when $\phi (b_i)$ denotes the probability of alternative b_i being chosen, then

$\sum_{i=1}^{n} \phi (b_i) = 1$, i.e., some choice is in fact made from B.

alternative will also be the more probably chosen. Summarizing such (as yet undetermined!) qualities by the blanket term 'utility', the axiom would run about as follows: *the probability of a choice being made from a behavioural set* (i.e., the probability of a certain course of action being taken by an individual in a particular situation), *is proportional to the utility of that selection as determined by the individual in question.* This idea is common enough, the more so as the notion of utility will, in its turn, be rendered in terms of the individual's preference – and probability judgments – in line with a widespread tradition.

However, we are faced here by a few difficulties.

To begin with, while probabilities cannot be negative, in accordance with elementary probability theory, utilities, on the other hand, surely can as we will see in the sequel. This obviously precludes the possibility of any simple relationship of proportionality or even equality between behavioural probabilities and utilities!

A second difficulty resides in the fact that while the probabilities of a behavioural set's alternatives must needs sum to 1, there is absolutely no guarantee that those alternatives' utilities will equally sum to a constant value. This, too, renders it impossibe to formulate the axiom sough for in terms of any straightforward proportionality or equality.

The way out of these difficulties is (1) to phrase the axiom in terms of relative utilities, so defined that they are always greater than, or equal to zero; and (2) to introduce a factor of proportionality which corrects both for the size of the behavioural set (the number of alternatives in it), and for the *distribution* of the utilities over het set's alternatives. This requires the introduction of the following notions:

Figure 5:

D-1.2 By the magnitude of a behavioural set, or M(B), will be understood the sum of the absolute values of the utilities in that set,

$| U (b_i) |$, $b_i \varepsilon B$. Or $M(B) = \sum_{i=1}^{n} | U (b_i) |$

D-1.3 By the yield of a behavioural set, or Y (B), will be understood the sum of the utilities in the set, or

$Y (B) = \sum_{i=1}^{n} U (b_i^I)$

D-2.1 By $\upsilon (b_i)$ will be understood the relative utility of an alternative $b_i \varepsilon B$, so that

$$\upsilon (b_i) = \frac{U (b_i)}{M (B)} + 1$$

It is easy to see, then, that we must always have

T-5.3 $\upsilon (b_i) \geqslant 0$

It is possible now to formulate the axiom we are looking for:

S-1 When n(B) is the number of alternatives $b_i \varepsilon B$, and $\eta (B)$ is called the relative yield of the set:

$$\phi (b_i) = \frac{1}{\eta (B) + n (B)} \cdot \upsilon (b_i)$$

The reason for calling $\eta (B)$ the relative yield of the set, clearly appears from the following theorem, which follows immediately from the fact that, as stipulated in *D-1.1*, the set's probabilities sum to 1, viz.:

T-1.3 $$\eta (B) = \frac{Y (B)}{M (B)}$$

It is not too difficult to see that we must also have

T-1.1 $$\frac{1}{\eta (B) + n (B)} \cdot \sum_{i=1}^{n} \upsilon (b_i) = 1 ,$$

which is of course equal to the sum of the set's probabilities, as it should be.

This theorem, then, together with *T-5.3* clearly shows that the axiom *S-1* does indeed solve the difficulties mentioned before.

Before continuing the development of the theory, it is well to pause for some comment.

In view of the connotations or ordinary discourse, it may sound somewhat strange to view behaviour consistently in terms of choice. For, choice would seem to exist only in situations of freedom: when an individual is coerced,

we do not ordinarily say that he 'chooses'. Similarly, in many situations we say that an individual does not have any choice at all, and that there are no alternatives left him but one. In all cases, however, the peculiarity of a choice conception is not inherent in that conception itself, but a consequence of the fact that we normally and uncritically do apply a special, if mostly implicit, *theory* about *how* and *what* people actually choose. For, to take a typical example, the man who is threatened with a gun *does* face numerous alternatives: to comply with the robber's wishes, to fight back, to fly, to cry for help, to ask for mercy, to cheat, etc. That we often expect him 'to have no alternative but comply', is a prediction which is consequent upon our knowledge of guns, the victim's evaluations of his life and wallet, his expectations of the (slight) chances of success of any other course of action, etc. The ambiguity of such discourse is vividly illustrated by the fact that we often use the same expression to justify non-compliance – as when 'he had no alternative but fight', for instance when honour is involved. But, of course, this or any similar theory does not really argue against such a choice conception at all. In a way such discourse itself applies, and thereby strengthens, a choice conception of behaviour!

Similarly, and in spite of its explicit and 'calculative' language the theory does not at all assume that the individual himself is aware or conscious of making a choice, or that he should be aware of the alternatives before him, and clearly calculate their relative utilities. Of course, this *may* occur. But such occurence is not a *condition* for the valid application and validity of the axiom. The latter's function is to explain or predict behaviour, not to describe what goes on in the agent's head, or the agent's own conception of his actions.

The notion of utility employed here has not yet been defined substantively. It merely refers to those qualities which render an action 'attractive'. As a consequence, the theory is not in any way restricted as to the sort of behaviour to which it applies. In fact, which utilities (and, at one remove, preferences and propability estimates) will actually guide human action can only be determined on the basis of the actual observation of behaviour and applying the present conception.[15] As yet, then, the theory is completely empty and general – we are concerned merely with the *mechanism* of human behaviour. This means among other things that the theory is not all to be restricted to so-called 'rational' behaviour – whatever that may be. Of course, rationality is sometimes defined as acting from a consistenly ordered (in the sense of *Af-1, -2,* and *-3)* set of alternatives. But we have already seen that these formal requirements do not in any fashion preclude the empirical occurrence of less consistent orderings. Besides *such* a criterion of rationality is extremely shallow . . .[16]

So far, then, the theory, *i.e.*, the notion of utility is empty. It has already been intimated that filling it with empirical substance is a matter of a process through which additional axioms and (sub)theories progressively specify the meaning of the notions involved. In this essay we need not go the entire length of this process,[17] but one additional step should be made.

Basically it consists of letting the action's utility be determined from the agent's evaluations and expectations regarding the outcomes associated with the action in question. Specifically, it will be assumed that an action's utility increases with an increasing likelihood of (greater) benefits associated with it, while decreasing with an increasing likelihood of (greater) sacrifices to follow from it – including such 'intrinsic' benefits or sacrifices as involved in the pleasure or displeasure of performance itself. Benefits and sacrifices, or whatever other equivalent term might be chosen, are to be defined, in their turn, in terms of the relation of preference. First of all, this calls for an elaboration of the notion of preference. In particular we need to say something about the ordinal representation of preference-judgments, as well as to define an additional concept, namely that of *preference-magnitude*. To begin with, then, it shall be assumed that preferences can be mapped unto some set of ordinals. As follows:

Figure 6:

A-2.1 When o is a system of ordinal numbers $(0,1 \varepsilon o)$, π (e) representing the preference-ordinal of some outcome, thing, occurrence or possession, e_k, while $e_k > \pi\ e_1$ means that e_k is preferred to e_1 :

π (e) ε o

$\pi (e_k) > \pi (e_i) \leftrightarrow e_k > \pi\ e_1$

π (e) $\geqslant 0$

This allows us to define the notion of preference-magnitude, as follows

D-3.1 By the preference-magnitude of an outcome e, or Π (e), as judged by some individual in a situation s, will be understood the extent to which the occurrence of e is preferred to its non-occurrence e. Or

Π (e) = π (e) - π ($\sim$ e)

Preference-magnitude, then, has been defined in terms of the (non-)-occurrence of outcomes or occurrences, not unlike, though somewhat more definite than the 'status quo' or similar constructions sometimes used to serve as a yardstick to judge the attractiveness of things.[18] Also, it clearly covers

what is sometimes called the intensity' of preferences. An outcome's *preference-magnitude* may be greather than, smaller than, and equal to 0, that is, when the agent prefers its occurrence to its non-occurrence, or *vice versa*, or when he is indifferent to it – defining *benefits, sacrifices,* and *indifferents,* respectively:

Figure 7:

D-3.2 An outcome will be called a benefit if and only if $\Pi(e) > 0$; a sacrifice if and only if $\Pi(e) < 0$; and an indifferent if and only if $\Pi(e) = 0$.

It is not necessary to pursue the development of the calculus of preference any further here; the above suffices for our construction of the utility notion. This is to proceed with the help of a second judgment concerning the outcomes associated to the behavioural alternatives concerned, *viz.* that of (subjective) probability. It is to be noted, incidentally that this notion is assumed to obey the usual axioms of the calculus of probability, properly formulated.

To begin with we will assume that the utility determined with respect to an indifferent outcome will be zero – whatever the value of the probability concerned. In the second place, and as already intimated, we will assume the effect of probability-estimates upon utility to vary with the 'sign' of the relevant outcome's preference-magnitude, so that increases in probabilities *increase* the utility of an action with an associated benefit, but *decrease* it when a sacrifice is concerned. Thus we get:

Figure 8:

A-3.1 $\phi\,(^{e}i/b_i)$ denotes an individual's 'estimate' of the likelihood that outcome e_i will be associated to, or follows from, alternative b_i.

$U\,(^{e}i/b_i)$ is the utility of b_i as estimated with respect to b_i.

$$U\,(^{e}i/b_i) = \phi\,(^{e}i/b_i) \cdot \Pi\,(e_i)$$

Normally, of course, several outcomes, both benefits and sacrifices will be associated with any one alternative – everything has a price . . . Two cases may be distinguished. In the first, 'inclusive' case, all the outcomes occur together, though with different probabilities. In the second case, the outcomes are mutually exclusive in that the occurrence of one of them will

preclude that of any one of the others. In the first case it will be assumed that the total utility of the set is merely the sum of the individual utilities. In the second case it will b eassumed to equal the mean of those utilities, as the addition of an exclusive benefit will somewhat increase, and of such a sacrifice somewhat decrease the utility of the whole, though not so much as when they are to occur together. In other words:

Figure 9:

$$A\text{-}1.1 \qquad {}^{E}/b = \bigcap_{i}^{n} (^{e}i/b) \rightarrow U\,(^{E}/b) = \sum_{i=1}^{n} U\,(^{e}i/b)$$

$$A\text{-}1.2 \qquad {}^{E}/b = \bigcup_{i}^{n} (^{e}i/b)\ \&\ \bigcap_{i}^{n} (^{e}i/b) = \emptyset$$

$$U\,(^{E}/b) = \frac{1}{n} \cdot \sum_{i=1}^{n} U\,(^{e}i/b)$$

As indicated several times before, all this does not yet amount to anything more than the bare essentials of a theory of human behaviour. It is a mere general mechanism in the sense that it provides the apparatus through which given preferences and probability-estimates, or evaluations and information can be made to produce (predictions of) definite behavioural probabilities. As such information about human evaluation and information, or, in somewhat different words, of motives, interests, and insight, is not to be provided here, the theory is also invariant with respect to all sorts of personal, cultural and social idiosyncracies; it is truly general. But by the same token it is also empty. Still, it suffices to solve our main problem, *viz.* the determination of the general mechanism of the political process.

4 Political mechanics

4.1 Behavioural matrices

Politics has been defined in a wide variety of ways.[19] Perhaps the most common and traditional approach is to conceive it in terms of the origins and effects of governmental politics.[20] Others have viewed it much more widely as the problem of how people live together.[21] It has been identified as the problem of 'Who gets what, when, and how?'[22]; as the study of power or influence[23]; or as the control of people or environment.[24] It has also been viewed as a matter of decision-making,[25] of producing authoritative allocations of values,[26] of social choice,[27] and of markets and collective action.[28] We need not reject some of these definitions as 'false', or commend others

as 'true'. After all, we are merely concerned with a matter of definition, to which the notion of truth does not even apply at all. The matter is important, though, in that is serves to identify the problems we are interested in so that they lend themselves to scientific enquiry and theory-formation. And the basic weakness of most of the traditional conceptions of politics is *not* that they define uninteresting, irrelevant, or even 'un-political' research problems, but rather *that they do not do so in the context of a sufficiently developed, articulate explanatory theory*.[29] To that extent, then, they are arbitrary; they do not and cannot define solvable problems, and, in a sense, they do not even pose research-problems. Our problem is to explicate what is commonly thought to constitute significant political problems in theoretically relevant terms. And since the basic decision has already been made that it is to be a matter of individual behaviour, politics will have to be defined in the terms of a behavioural theory.

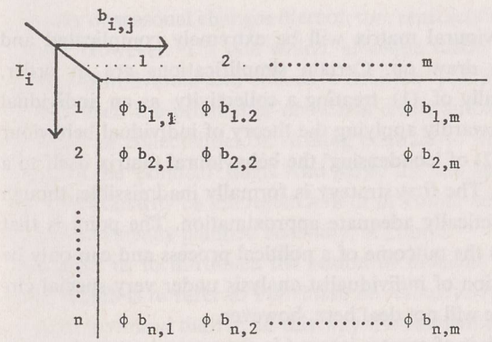
In their own way all the definitions quoted refer to processes through which within or among various different human groups and individuals certain behaviours are made more, others less probable. 'Power', 'influence, '(binding) decisions', 'authoritative allocations of values', 'governmental policies', etc. all imply changing, steering, or controlling the behaviour of sets of people. In the language of the preceding section, then, it is a matter of bringing about or changing certain sets of behavioural probabilities. And, on the other hand, every political outcome, every law, agreement, *modus vivendi,* every collective action or policy, or any other political arrangement ultimately boils down to a (sometimes very large and complex) set of behavioural probabilities.

Thus a national tax policy is nothing more nor less than an intricate system of behavioural situations and alternatives defined for a wide range of people whose behavioural probabilities have to be circumscribed rather narrowly. Those who are gainfully employed in a variety of ways, and depending upon their personal background and situation must be made to pay a proportion of their income in the form of taxes. Beside the tax payer, however, a large number of other people or rôles are equally involved in the process, notably tax inspectors and collectors, judges, policemen, and a great many other civil servants. *Their* behavioural choices, too, will have to be narrowly coordinated and circumscribed in a great many relevant situations.

Similarly, a state pursuing an external policy, for instance fighting a war, reduces to a complex network of all sorts of individuals performing a great variety of different tasks: some carrying guns and firing them (in very specific situations and ways, that is), others taking care of logistics and intelligence, of commanding and coordinating operations, of 'political' leadership, propaganda, diplomacy, internal order and production, etc. etc. And when a settlement is ultimately reached, this again reduces to the definition and effectuation of a set of behavioural propabilities, concerned with paying ransom, recognizing new boundaries or spheres of influence, refraining from interfering with some of the other party's activities, and so on.

Every political outcome, then, can be viewed as a particular *behavioural matrix* (Du: gedragsmatrix) with respect to a particular situation or set of situations. It is a matrix whose rows are constituted by the n individuals I_i concerned, and whose columns are formed by the relative probabilities of those individuals' m alternatives b_{ij}, as illustrated below.

Figure 10:



A behavioural matrix $B^{I,\mathcal{S}} = \left[\phi\ (b_{i,j})\right]_{n,m}$ for $I = \{I_i\}$ in a situation $\mathcal{S} = \{s_i\}$

A row of the behavioural matrix, then, contains positive probabilities only for those alternatives that are in the individual's behavioural set. For, according to *D-1,* all the other entries, *i.e.*, the alternatives *not* in individual I_i's behavioural set will be zero.

Obviously, the matrix dissolves into an individual's behavioural set when the set *I* is reduced to one member-individual only; a behavioural set is a marginal case of a behavioural matrix, and the behavioural matrix is the *union* of the individuals' behavioural sets of which the alternatives' relative probabilities have been determined. In other words (see figure 11).

It bears emphasizing that the behavioural matrix, is defined in terms of *behavioural probabilities,* and *not* of *utilities, preferences* or *subjective probabilities*. Political outcomes, including collective 'behaviour', then, are not

Figure 11:

D-4.1 When I is a set of n individuals I_i, or $I = \{I_i\}_n$; and s represents a set of situations in which the individuals find themselves at a particular moment, i.e., $s = \{s_i\}$; while $b^{I,s}_{i,j}$ represents the j-th alternative of I_i in s, so that $\{b^{I,s}_{i,j}\} = I \times \bigcup_{i=1}^{n} B^{I,s}_{i}$, then I's behavioural matrix in s is the matrix of behavioural probabilities $B^{I,s} = \left[\phi\ (b_{i,j})\right]_{n,m}$

conceived in terms of 'collective preferences' or of 'aggregating' individual preferences.

In many cases the behavioural matrix will be extremely complicated and practically impossible to draw up. Certain simplifications are in order, then. They consist typically of (1) treating a collectivity as an individual writ large, and straightforwardly applying the theory of individual behaviour to those entities, and/or (2) of 'condensing' the behavioural matrix itself to a rather more simple form. The first strategy is formally inadmissible, though often applicable as a practically adequate approximation. The point is that collective action is always the outcome of a political process and can only be equated with the application of individualist analysis under very special circumstances with which we will not deal here, however.

The second strategy which is of greater interest in the present context, comes to reducing the matrix to a row of the *mode, mean,* or the *median* of the behavioural probabilities in the several columns. Thus, to take the case of the *mean* only, such a condensed matrix may be defined as:

Figure 12:

D-4.2 Let $B = \left[\phi\ (b_{i,j})\right]_{n,m}$ be a behavioural matrix; and let $\phi\ (b_j)$ be the mean of the probabilities in column j, that is $\phi\ (b_j) = \frac{1}{n} \cdot \sum_{i=1}^{n} \phi\ (b_i)_j$.

When ${}_cB$ stands for the condensed matrix: ${}_cB = \left[\phi\ (b_j)\right]_m$

This can, and often is, still further reduced by defining *standard* alternatives, to be differently interpreted in every individual case, and, conversely, combining a number of individually different alternatives and situations. Thus the basic alternatives facing an individual as he seeks to make a living may be

defined to be 'working', 'stealing', and 'begging '– even though each one of these will assume vastly different forms for every concrete individual and situation in the collectivity or society concerned! In many cases we are interested in such a condensed matrix rather than in a complete one. Statistics of crimes and other misdemeanours, when used to measure the effectiveness of the law (that is, the extent to which 'society' has been able to effectively define a particular behavioural matrix) constitute another example of vastly condensed matrices.

In one way or another, then, politics can be described in terms of (changes in the) behavioural matrices which characterize certain collectivities with regard to particular problems. But we seem not to be interested in *every* behavioural matrix whatsoever! For instance, the level of economic activity in a society or seasonal changes thereof, too, represent (changes in) a behavioural matrix. However, it is one which, although made up of, or following from numerous individual and collective decisions and intentions is not as a general rule itself the product of conscious effort and struggle on the part of individuals or collectivities, in striking contrast to what normally occupies the center of the 'political' stage. And partly for this reason, the political scientist will not ordinarily be interested in it or in similar occurrences – excepting the case of a centrally planned economy, of course.

This leads us to introduce the notion of *demand behaviour* (Du.: vraaggedrag) which is to refer to *individual or collective efforts at changing a particular behavioural* matrix. In this way the element of intention and conscious design would seem to neatly distinguish a *political process,* to be defined merely as *a set of interrelated demand behaviours,* from any other social or economic processes. But does it really?

For the above definition of demand behaviour is provisional only. In its reference to intention or design ('efforts at') it is rather vague; most importantly it is not cast in terms of unambiguous theoretical relevance. Now it follows from our axiom *S-1* that behavioural probabilities (and, by implication, a behavioural matrix) can be changed only if, and to the extent that the utilities concerned are changed. And this, in its turn, can be done only by associating specific benefits and sacrifices to the alternatives in question, as follows from *A-4.* In other words, demand behaviour can be effective only, indeed: it can be demand behaviour only, to the extent that it does manipulate outcomes which are valued by its 'addressee'. It is, one might say, always a matter of sticks and carrots – even though these may appear in most subtle (and as yet undetermined!) guises.

But this argument at the same time allows for a more rigorous and systematic definition of demand behaviour, *viz.* in terms of its actually associating valued outcomes, benefits or sacrifices, to the addressee's alternatives.[30] As follows:

Figure 13:

D-7.1 I represents a set of individuals $\{I_i\}$, while A is another set of individuals $A = \{I_k\}$

B is I's behavioural matrix in situation s, consisting of the actions $b_{i,j}$, to which are associated the outcomes E, or $^{E/}b_{i,j}$

$\{e_{i,j}\}$ represents the set of outcomes associated with A's actions $b_{k,j}$, but which are in their turn associated to the actions $b_{i,j}$ in I's matrix. That is, if

$e_{i,j} \in {}^{E/}b_{i,j}$, then

$D(A,B) = \left[e_{i,j}\right]_{n,m}$ will be called A's demand behaviour with respect to I's behavioural matrix B, or I for short.

However, whether or not some agent's actions associate valued outcomes to the alternatives of another is not determined by the former's intentions only! An agent's behaviour might well constitute demand behaviour with respect to some other agent even if it were not so intended at all or when it occurred unawares. Surely, in actual political analysis, one would not wish to disregard or ignore the effects of American or Soviet policies upon, say, Venezuela or Zaïre merely because such effects were not actually intended? The above definition is both theoretically relevant and stricter, if only because any reference to that vague and ambiguous notion of intentions has been omitted. But for the same reason it does not any more differentiate between economic, social and political processes. In fact, it shows most social and economic processes to be of a political nature, or, put somewhat more innocuously, to have an important political aspect.[31] For the basic fact of social life, including economics as well as politics in a more traditional sense ,is precisely the *inter*-dependence of human action which really comes to saying that it consists of sets of interrelated, if often unintended, demand behaviours, *i.e.*, of *political processes.*

Obviously this is to construe the domain of politics rather widely. It would carry us much too far to discuss all the problems this raises in depth here.[32] The following brief comments must suffice.

To begin with, this conceptions is admirably suited to bring to light the basic unity of the social sciences, identifying an eminently important core area of common and identical problems and concerns. And if the statement that social life forms a whole in which everything is related to everything else, is to be more than a platitude, we need a conception which is indeed capable of describing and identifying such complex wholeness! Besides, not only that occurrences in all spheres of human life are intimately *related,* as there is for instance an intimate if indirect connection between family life and international affairs. But whoever who has even watched his or his neighbour's family life and marriage with an open mind, can deny the fundamental *identity* of what happens there with what happens in national and international politics, at least in important respects?

Secondly, and most importantly, the present conception identifies a set of relevant and important research problems, if only because it can easily be seen to cover those which have traditionally been defined as such in politics and other social sciences. It does so in theoretically relevant terms, which is a necessary if not sufficient condition for their eventual *solvability*. It is *this* which is important from a scientific point of view – *not* the academic names attached to those problems.

Finally, the above is indeed nothing more than a definition of research problems. It is *not* a set of priorities for actual research. To show that, say, family life has an important political component does not at all oblige any particular professional political scientist to actually investigate family life. By the same token it does not preclude any division of labour among discipines or, (social) scientists.

4.2 A matter of weight

As indicated already, politics is concerned with changes in behavioural matrices. Obviously, such *behavioural changes* (Du.: gedragsverandering), in their turn, reduce to matrices of the shifts in probabilities effected by some set of demand behaviours:

Figure 14:

D-5.1 By a behavioural change, $d_{1,o}B$, will be understood the matrix of the probability-shifts, $\Delta_{1,o}\,\phi\,(b_{i,j})$, occurring between moments t_1 and t_o in B. Or $d_{1,o}B = \left[\Delta_{1,o}\,\phi\,(b_{i,j})\right]_{n,m} \doteq B_1 - B_o$

With respect to the condensed matrix we have

$$d_{1,o}\,{}^{c}B = \frac{1}{n} \cdot \left[\sum_{i=1}^{n} \Delta_{1,o}\,\phi\,(b_i)_j\right]_m$$

Our problem now is to explain the occurrence and the magnitude of such behavioural changes from the properties of demand behaviour being aimed at the behaviour (al matrix) of the collectivity in question. As a first step we will introduce the notion of *demand weight,* or the *weight* of demand behaviour (Du.: vraaggewicht) -noting, incidentally, that as in the case of utility,

this is merely to give a name to a set of properties which is as yet undetermined. Defining such demand weight as the behavioural change produced by demand behaviour, it is the task of the subsequent analysis to deduce the relevant properties, the notion's substance as it were, from the theory as already developed. Thus we get

Figure 15:

D-7.2 Let $\Delta\ \phi\ (b_{i,j}) \mid e_{i,j}$ represent the probability shift induced in $b_{i,j} \in B$ by A's demand behaviour, $e_{i,j} \in D\ (A,B)$.
Then, by the weight of such demand behaviour, WD (A,B) will be understood WD $(A,B) = \left[\Delta\ \phi\ (b_{i,j}) \mid e_{i,j}\right]_{n,m}$

It is to be observed, then that demand weight is represented by a *matrix,* and is not a scalar magnitude. This is first of all because both demand behaviour itself and behavioural changes are described by matrices, demand weight being the behavioural change effected by demand behaviour. Secondly, however, it turns out to be somewhat difficult to represent demand weight as a scalar, unless at the price of a grave loss of information. For, from *D-1.1* we know that the probabilities of the alternatives in a behavioural set sum to 1. Hence, we must also have that the probabilities in a behavioural matrix' rows also sum to 1:

Figure 16:

T-17.1 $$\left[\phi\ (b_{i,j})\right]_{n,m} = B \rightarrow \sum_{j=1}^{m} \phi\ (b_i)_j = 1$$

and for the condensed case

$$\left[\phi\ (b_j)\right]_m = c^B \rightarrow \sum_{j=1}^{m} \phi\ (b_j) = 1$$

From which it directly follows that

T-18.1 For changes in (condensed) behavioural matrices:

$$\sum_{j=1}^{m} \Delta_{1,o}\ \phi\ (b_i)_j = 0$$

$$\sum_{j=1}^{m} \Delta_{1,o}\ \phi\ (b_j) = 0$$

But these theorems mean that it is quite senseless to measure demand weight straightforwardly as the sum of the probability shifts induced by demand behaviour – natural though this approach might seem to be at first sight. If, for some purposes, then, we would wish to define such a scalar measure, we would have to do it in terms of the *absolute values* of the shifts induced.

We have already seen that, according to our axiom on behaviour, demand behaviour can be effective, *i.e.,* can acquire weight, only to the extent that it succeeds in associating (dis-)valued outcomes to the other party's alternatives. The problem before us now is: How much so? How much will a particular outcome change a given behavioural probability?

To begin with it is not too difficult to see that such behavioural changes must be roughly proportional to the changes in relative utility induced by the outcome in question. That is (see figures 17 and 18).

In this way, then, we have determined the magnitude of the probability shifts caused by demand behaviour in terms of either the relative utilities as computed from the outcome $e_{k,j}$ alone, or the probabilities so computed. It hardly needs emphasizing that it is the relative utilities and propabilities as determined by the addressee of demand behaviour, which count, irrespective of the demanding agent's evaluations.

What needs emphasizing, though, is the fact that the probability-as-computed-from-the-outcome- e (and the same goes for the relative utilities involved) is really a *conditional one.* That is, it is really the probability of the combination of two events, namely the association of $e_{k,j}$ to $b_{i,j}$ or, rather to the set of outcomes E already so associated, *and* the changing of the probability of $b_{i,j}$ *given such association.* Or (see figure 19).

The last theorem in particular shows changes in behavioural probabilities under the influence of demand behaviour to be determined by three sets of factors: (1) a certain coefficient characteristic for the behavioural matrix, given the demand behaviour directed at it; (2) the probability of demand behaviour in fact being successful in attaching its outcomes to the alternatives in the matrix, or, as we will call it: *demand access;* (3) a more complicated measure for the amount of change in relative utilities which deman behaviour causes, to be differentiated according to the two 'cases' distinguished in the preceding theorems: *demand force.* Now, ultimately we are not interested merely in the single changes in behavioural probabilities as in the above theorems, but rather in matrices of these, i.e., in *behavioural changes* as defined by *D-5.1.* Thus we get the following definitions (see figure 20).

The reasons for defining this coefficient as a square diagonal matrix are first to comply with the rules for matrix multiplication in subsequent analysis, and second that it is easy to see that dissolving a behavioural matrix into a matrix of behavioural sets always must produce a square diagonal matrix.

Figure 17:

T-7.7 Let $\Delta\upsilon(b_{i,j}|e_{i,j})$, or $\Delta\upsilon(e_{i,j})$ for short, represent the relative utility shift induced by $e_{i,j}$, and similarly for probabilities $\Delta\phi(b_{i,j}|e_{i,j})$.

Let $\eta^{+}(B) = \eta(B) + \Delta\eta(B|e_{i,j})$ with respect to change in the set's relative yield. Then we have approximately:

$$\Delta\phi(b_{i,j}|e_{i,j}) = \frac{\Delta\upsilon(b_{i,j}|e_{i,j})}{\eta^{+}(B) + n(B)}$$

(ignoring the small factor $\dfrac{\Delta\eta(B)}{\eta^{+}(B) + n} \cdot \phi(b_{i,j})$

Letting $M^{+}(B) = M(B) + \Delta M(Be_{i,j})$, it directly follows from the definition of relative utility *D-2.1*, that

$$\Delta\upsilon(e_{i,j}) = \frac{\Delta U(b_{i,j}|e_{i,j})}{M^{+}(B)} - \frac{U(b_{i,j})}{M(B)} \cdot \frac{\Delta M(B|e_{i,j})}{M^{+}(B)}$$

Further analysis of this result requires us to distinguish two different cases:

(I) $\{\Delta U > 0 \;\&\; U > 0\} \vee \{\Delta U < 0 \;\&\; U < 0\}$

that is, 'rewarding' an already beneficial action, or 'punishing' an already unattractive one.

(II) $\{\Delta U > 0 \;\&\; U < 0\} \vee \{\Delta U < 0 \;\&\; U > 0\}$

i.e., making a beneficial course of action somewhat less so, or rendering an unattractive action somewhat less unattractive.

As M(B), the set's magnitude has been defined as the sum of its absolute utilities, it must also be the case that in case I: $\Delta M(B) = \Delta U(e_{i,j})$, and in case II: $\Delta M(B) = -\Delta U(e_{i,j})$. Hence:

T-7.0

$$\Delta\upsilon(e_{i,j}) = \begin{cases} \dfrac{\Delta\cup(e_{i,j})}{M^{+}(B)} \cdot \upsilon(b_{i,j}) & \text{in case I} \\ -\dfrac{\Delta\cup(e_{i,j})}{M^{+}(B)} \cdot \{\upsilon(b_{i,j}) - 2\} & \text{in case II} \end{cases}$$

Figure 18:

Applying this result to *T-7.7* leads to

T-7.7

$$\Delta\phi(e_{i,j}) = \begin{cases} \dfrac{1}{\eta^{+}(B) + n} \cdot \dfrac{\Delta U(e_{i,j})}{M^{+}(B)} \cdot \upsilon(b_{i,j}) & \text{(I)} \\ -\dfrac{1}{\eta^{+}(B) + n} \cdot \dfrac{\Delta U(e_{i,j})}{M^{+}(B)} \cdot \{\upsilon(b_{i,j}) - 2\} & \text{(II)} \end{cases}$$

Now from *A-1.1* (taking only the simpler case) on the additivity of utilities, it follws that $\Delta U(e) = U(^{e}/b)$, that is, the utility-increase caused by e is equal to B's utility computed on the basis of e alone. It is not difficult to see, then, that applying *A-1.1* and *S-1* to *T-7.1* gives us the following results:

T-7.5

$$\Delta\phi(e_{i,j}) = \begin{cases} \dfrac{1}{\eta^{+}(B) + n} \cdot \{\upsilon(^{e}i,j/b_{i,j}) - 1\} \cdot \{\upsilon(b_{i,j})\} & \text{(I)} \\ -\dfrac{1}{\eta^{+}(B) + n} \cdot \{\upsilon(^{e}i,j/b_{i,j}) - 1\} \cdot \{\upsilon(b_{i,j}) - 2\} & \text{(II)} \end{cases}$$

T-7.6

$$\Delta\phi(e_{i,j}) = \begin{cases} \phi(^{e}i,j/b_{i,j}) \cdot \upsilon(b_{i,j}) - \phi(b_{i,j}) & \text{(I)} \\ -\left[\phi(^{e}i,j/b_{i,j}) \cdot \{\upsilon(b_{i,j}) - 2\} - \phi(b_{i,j})\right] - \dfrac{2}{\eta^{+}(B)+n} & \text{(II)} \end{cases}$$

The importance of *demand access* (Du.: vraagtoegang), our second factor, can be readily seen. For some demand behaviour to have any change of meeting with success, it must first of all succeed in actually attaching its outcomes to the addressee's alternatives. If not, no amount of threat or promise, no blackmail and bribery, can change behaviour a bit. It is, for obvious reasons, here defined as a matrix of probabilities (see figure 21).

Demand access, too, has been defined as a square diagonal matrix, and for the same reasons as in the case of the matrix' coefficiënt. It is to be noted, incidentally, that demand access has thus been defined to be constant with respect to the several behavioural sets comprising the matrix, and is not differentiated further with regard to *their* component alternatives.

Figure 19:

$$\phi\,(e_{i,j}/b_{i,j}) = \phi\,\{\,(e_{i,j}\cap E)\cap(d\,b_{i,j}\mid e_{i,j}\cap E)\,\}$$

From elementary probability theory we then get

T-21.1

$$\phi\,(e_{i,j}/b_{i,j}) = \phi(e_{i,j}\cap E)\,.\,\phi\,(b_{i,j}\mid e_{i,j}\cap E)$$

Let us call the probability $\phi(e_{i,j}\cap E)=a_{i,k}$, and let us further call the actual probability shift caused by $e_{i,j}$ $\Delta_a\phi(e_{i,j})$, and the potential shift so caused, i.e., $\Delta\phi(e_{i,j}|e_{i,j}\cap E):\Delta_p\phi(e_{i,j})$. A little reckoning then produces:

T-21.2

$$\Delta_a\phi(e_{ij})=\begin{cases} a_{i,k}\cdot\Delta_p\phi(e_{i,j})+(a_{i,k}-1).\phi(b_{i,j}) & \text{(I)}\\[2ex] a_{i,k}\cdot\Delta_p\phi(e_{i,j})+(a_{i,k}-1).\{\dfrac{2}{\eta^+(B)+n}-\phi(b_{i,j})\} & \text{(II)}\end{cases}$$

T-21.5

$$\Delta_a\phi(e_{ij})=\begin{cases} a_{i,k}\cdot\dfrac{1}{\eta^+(B)+n}\cdot\{\upsilon\,(e_{i,j}).\upsilon(b_{i,j})-\upsilon(b_{i,j})\} & \text{(I)}\\[2ex] a_{i,k}\cdot\dfrac{1}{\eta^+(B)+n}\cdot\{-\{\upsilon(e_{i,j}).\upsilon(b_{i,j})-\upsilon(b_{i,j})\}+2.\{\upsilon(e_{ij})-1\}\} & \text{(II)}\end{cases}$$

Figure 20:

D-6.1 Let $B=\left[\phi(b_{i,j})\right]_{n,m}$ represent the behavioural matrix of $I=\{I_i\}$ in a particular set of situations, $s=\{s_i\}$. Let $B_{i,k=i}$ be I_i's behavioural set, comprising a subsection of B's alternatives $\{(b_i)_j\}$ in any one of its rows.

Let further $c_{i,k=i}=\dfrac{1}{\eta^+(B_i)+n(B_i)}$, so that $c_{i,k}=0$ if $\sim(i=k)$.

Then, by B's coefficient will be understood the square diagonal matrix $C(B)=\left[c_{i,k=i}\right]_{n,n}$

Figure 21:

D-7.4 Let $B=\left[\phi(b_{i,j})\right]_{n,m}$ represent the behavioural matrix of $I=\{I_i\}$ in $s=\{s_i\}$. Let $B_{i,k=i}$ be I_i's behavioural set in B. When $e_{i,j}\varepsilon D$, and E represents the set of outcomes associated with $b_j\varepsilon B_{i,k=i}$, then the probability $a_{i,k}=\phi(e_{i,j}\cap E)$ will be called D's access to B with respect to $e_{i,j}$. More generally:

$AD(A,B)=\left[a_{i,k}\right]_{n,n}$, $a_{i,k}=0$ if $\sim(i=k)$

It is precisely this notion of 'access', as one of the most crucial aspects of political systems, which has been brought into prominence by the research of *David B. Truman.*[33] For in spite of the obvious differences in terminology, these terms do refer to what are essentially identical things. And the above argument fully validates *Truman's* emphasis. For *T-21.2* and *T-21.5* in particular explain why politics is to such a large extent a struggle for participation in decisionmaking, for membership in all sorts of boards, councils, commissions, and committees, for the right to advise, and to be heard and consulted -all of which are basically concerned with demand access and without which political influence cannot even be attempted. It is, then, a central aspect of constitutional politics as well as of international affairs and 'power politics', whose importance could hardly be exaggerated.[34]

In itself access does not yet bring about any probability shift in the addressee's behaviour. Our third factor that of *demand force* (Du.: vraagsterkte), is concerned precisely with this aspect of the matter. As follows

Figure 22:

D-7.5 By some demand behaviour's force, or demand force, will be understood:

in case I

$$FD(AB)=\left[\upsilon(e_{ij}/b_{ij}\mid e_{i,j}\cap E)\,.\,\upsilon(b_{i,j})-\upsilon(b_{i,j})\right]_{n,m}$$

in case II

$$FD(A,B)=-\left[\upsilon(e_{ij}/b_{ij}\mid e_{ij}\cap E)\,.\,\upsilon(b_{ij})-\upsilon(b_{ij})-2.\{\upsilon(e_{ij}/b_{ij})\}\right]_{n,m}$$

Demand force, then, is a measure of the change in relative utilities demand behaviour is capable of effecting once it succeeds in establishing access. Demand force with respect to the condensed matrix will be defined by taking the column's means of the above changes in relative utility, in a rather obvious fashion.

From this definition, in conjunction with the definition of relative utility *(D-2.1)* and *A-3.1* linking utility to preference- and probability judgments, we straightforwardly get:

Figure 23:

T-22.4

in case I

$$FD(A,B) = \left[\frac{1}{M^{+}(B_{i,k=i})}\right]_{n,n} \cdot \left[\phi_i(^{e}ij/b_{ij}) \cdot \Pi_i(e_{ij}) \cdot \upsilon(b_{ij})\right]_{n,n}$$

in case II

$$FD(A,B) = \left[\frac{1}{M^{+}(B_{ik=i})}\right]_{n,n} \cdot \{2.\left[\phi_i(^{e}ij/b_{ij}) \cdot \Pi_i(e_{ij})\right]_{n,m} - \left[\phi_i(^{e}ij/b_{ij}) \cdot \Pi_i(e_{ij}) \cdot \upsilon(b_{ij})\right]_{n,m}\}$$

Of course, it is the evaluations and expectations of the *addressee,* as expressed by the subscripts in the above theorem, which count. No amount of determination on the part of the demanding agent to carry out a threat or promise can compensate for a lack of trust on the part of the addressee. In the latter's probability estimates as they figure in *T-22.4,* we meet with the familiar problem of 'credibility', which the present argument shows to be of much wider import than nuclear strategy.[35] Similarly, the greatest investment in demand behaviour on the part of the demanding agent is of no avail when the addressee does not care for the outcomes so manipulated. Those who do not care too much for their own life can hardly be threatened effectively with violence; and historically Europeans could, in their dealings with Africans and Indians, achieve wonders with things like mirrors, beads, brandy, and weapons, hardly representing great values *to them.*[36]

It readily follows from the definition of demand weight, *D-7.2* and from that of a behavioural change, *D-5.1,* that we must have

Figure 24:

T-27.4 WD = $dB|D$

Or: demand weight equals the behavioural change induced by demand behaviour.

We are now in a position to determine demand behaviour in terms of the relevant matrix' coefficiënt, demand access, and demand force. For, according to *T-21.5* and the relevant definitions described above, it must be the case that

Figure 25:

T-27.6 WD = C(*B*). AD. FD

For the condensed matrix $_{c}B$ we get, due to the peculiar rules for matrix multiplication:

T-27.9 $_{c}W D = {}_{c}F D$. AD. C(*B*)

In all cases, then, demand weight is the product of demand access, demand force, and the coefficient of the addressee's behavioural matrix. *T-22.4* above provides us with the means to relate demand weight to the addressee's probability- and preference judgments regarding the outcomes manipulated in demand behaviour.

It may be emphasized, though, that not one assumption about actual human preferences and probability estimates, about evaluation and information, has been made as yet. This means that the above argument is invariant with respect to personal and cultural idiosyncracies, to human fancy and folly, and that the analysis applies to every sort of political process.

Still, all this does not yet solve our basic question, *viz.,* when and how do political processes produce certain outcomes, or, what will be the shape of the behavioural matrix to result from a political process? For this is a matter of determining the *joint* effects of *sets* of demand behaviours (a political process being defined as a set of related demand behaviours), and of the moment when they settle for a more or less stable result. It is to this problem that we must now turn.

4.3 Political equilibrium

A *political process* may be described as a set of demand behaviours defined with respect to one behavioural matrix. Its analysis, then, requires first of all a solution to the problem of the *joint effects* of demand behaviours upon a matrix. As utilities are additive according to *A-1.1/2,* and as behavioural probabilities are so, too, in the sense that any probability at moment t_1 must equal that at moment t_0 plus the sum of the probability changes occurring in the meantime, it is not too difficult to show that the weights of the several demand behaviours in any one political process must be additive, too. That is

Figure 26:

T-23.2 When P = $\dot{\{}D(A_l,B)\}$, or $\dot{\{}D_l\}$ for short, represents a political process, then

$$\dot{W}\{\dot{D}_l\} = C(B) \cdot \sum_{l=1}^{n} AD_l.FD_l$$

T-23.3 $$\dot{W}\{D_l\} = \sum_{l=1}^{n} WD_l$$

When we now seek to determine when such a political process produces an 'outcome', 'result' or 'settlement', we are faced by a peculiar problem. For, in a sense, a political process has *always*, at any one moment, an outcome, which is merely the behavioural matrix which characterizes the collectivity at that particular moment. Obviously we are not interested in each and every such momentary and continuously shifting and changing outcome to be produced during a political process, but only in those which exhibit a measure of stability, that is, when the political process in some way or another settles to a more or less constant level.

The definition of a *political outcome* thus *comes* to exhibit a measure of arbitrariness; and, in relation to this, political outcomes should be conceived of dynamically rather than statically.

For, firstly, the stability of a behavioural matrix is a relative affair only. It is defined with respect to a specific period of time during which the behavioural probabilities involved remain constant – and this period may range from a single moment to eternity! Which period to choose is a matter of our practical or theoretical interests, but is not in any way foreordained by the nature of the process itself. Secondly ,the question is What kind of stability to choose? For one may define stability with regard to a full behavioural matrix, in which case behavioural change becomes zero, or one might choose (any variety of) a condensed matrix. In the former case *all* probability shift are forbidden, a rather stringent condition! In the latter case changes in the alternatives' probabilities are allowed *if they cancel one another out*. Besides, how much variation or 'error' will be allowed? – -even zero is not an absolute here! As follows (see figure 27).

But thirdly, political outcomes are also of a relative and dynamic nature in that normally they are merely more or less temporary phases or levels of stability and equilibrium in ongoing political process. They are to be viewed, dynamically, as *features of ongoing political processes rather than, statically, as final solutions or end results*. True, when a process ends, that is, when no demand behaviour occurs, it thereby automatically produces an outcome as defined. In that case all the demand weights concerned reduce to zero and thus also the behavioral change, from *T-9.2*. But this is only a special, and, both theoretically and empirically, rather marginal case. For it follows from *T-23.2* and *D-8.2* that the condition is also, and much more generally, satisfied when the *sums* of the demand weights aimed at the alternatives concerned reduce to zero. And this implies not an *end* of the process, but a situation of *equilibrium* in which the several demand behaviours hold each other in check -of which the process' *ending* is merely a special case.

This can also be seen in a somewhat different way. Normally a political process can be viewed as a more or less extended sequence of steps or stages, sub-

Figure 27:

D-5.3 When ${}^{ss}B$ represents a strictly stable behavioural matrix; and ${}^{s}B$ represent a stable matrix during the period Δt:

$${}^{ss}B \leftrightarrow d^{B}_{\Delta t} = \left[\Delta\phi(b_{ij}) = 0\right]_{n,m}$$

$${}^{s}B \leftrightarrow d_{c}{}^{B}_{\Delta t} = \frac{1}{n} \cdot \left[\sum_{=1}^{n} \cdot \Delta\phi(b_{ij}) = 0\right]_{n,m}$$

i.e., stability defined either with respect to the entire matrix or to the condensed one.

This notion of stability is then employed to define that of a political outcome:

D-8.2 Let $P = D(A_{t}, B)$ be a political process concerned with B. Let us further call OP the outcome of P after the period Δt, and O'P the strictly defined outcome after Δt. Then

$OP = {}^{s}B|P$

$O'P = {}^{ss}B|P$

We also say that at OP P is inequilibrium, while at O'P in strict equilibrium.

processes really, each one of which contains a somewhat different set of demand behaviours, and each one producing a behavioural change.[37]

Figure 28:

When B_n represents a behavioural matrix at moment n, and B_o that at moment 0, while $d_t B$ represents the matrix' changes during intermediate periods, we must obviously have

$$B_n = B_o + \sum_{t=1}^{n} d_t B$$

But from this it can be directly seen that a stable result is reached as soon as *additional* behavioural changes become zero. In order to sustain the behavioural changes induced thus far, and to keep the matrix attained intact, this condition does not imply an *end* to the political process, but, rather, that no *changes* occur in demand weight. That is

Figure 29:

T-24.1 $OP \leftrightarrow \Delta W_c P = 0$

$O'P \leftrightarrow \Delta WP = 0$

Hence also:

T-24.2

Assuming demand access to be constant during the process, and $C(B)$ not to equal zero:

$$OP \leftrightarrow \sum_{1=1}^{n} AD_1 \cdot \Delta F_c D_1 = 0$$

$$O'P \leftrightarrow \sum_{1=1}^{n} AD_1 \cdot \Delta FD_1 = 0$$

This theorem, then, means a definite break with the idea that one could identify the *outcome* or *result* of a political process with its *end*. It shows such outcomes to be *dynamic* features of political processes, rather than static final solutions. They are bound to given *distributions* of demand behaviours and their weights, and as soon as these come to shift and change, for instance as technological and economic (r)evolution affects existing access- and force-relationships, they go, too.[38] In actual fact such important outcomes as state boundaries, spheres of influence, relations of hegemony and sovereignty, internationally; as constitutional practices and laws, democracy or autocracy, the relationships between government and pressure groups, trade unions and employers, domestically, as indeed price levels in economic markets! -they all exist only by virtue of (a certain distribution of) the parties' continuing efforts, ... at changing them.

Thus the above identifies the conditions to be satisfied for a political process to produce an outcome of some stability. By the same token it also suggests in a general way what sort of factors will bear upon these outcomes. Apart from the structural factors which (in their turn partly determined by technology, socio-economic development, etc.) influence access relationships, such outcomes are determined by the balance of benefits and sacrifices, of risks and gains, involved in the outcome and in an (intensification) of demand behaviour on the part of each of the participants, for it is these things which define the moment when further intensification of demand behaviour will be judged too costly or risky, in relation to what is to be had from it, for the participants. And through them we are led to such things as the relations of dependence, strength and prestige among the participants, determined as these largely are by technology, socio-economic structure, cultural climate

and level of information. as these indirectly determine the risks and prospects of need and occasion for demand behaviour. Of course, only the contours of such an argument are thus visible. To more precisely and strictly determine the actual rôle and 'weight' of such factors requires an important extension of the analysis, but which cannot, for reasons of space, be undertaken here. This applies to other important questions of political research too. Thus we have not dealt with the problem of the origins of political processes, of why and how people will engage in politics, of what preferences and information will underly their behaviour, of collective action and the formation of political actors, of the actual course of the political process, etc. etc. What *has* been developed is only the central mechanism of behaviour and of politics, a mere starting-point for subsequent analysis.

Notes

1 This article sketches, with some adaptions and improvements, the central argument of Chapters (2.2) and (2.3) of my forthcoming *Foundations of politics* which contains a general, axiomatic and formalized theory of politics. The numbering of the axioms, etc. . ., used here is that of those Chapters. The letters D, A, and T indicate *d*efinitions, *a*xioms, and *t*heorems, respectively, while an f is added to distinguish the propositions of a purely *f*ormal or mathematical character, as in Df, Af, and Tf. In a few cases new technical English terms had to be coined; Dutch translations have been added.

2 See on this matter especially John O'Neill (ed.), *Modes of individualism and collectivism,* Heinemann, London 1973.

3 Cf. my Over theorievorming, in *Acta Politica* 4 (3), 1969, 275-97; and *Political integration: the formation of theory and its problems,* Mouton, Den Haag 1972, Ch. Two.

4 See in particular David Easton, *A framework for political analysis,* Prentice-Hall, New York 1965, Ch. 1; M. W. Jackson, The application of method in the construction of political science theory, in *Canadian Journal of Political Science,* V(3), 1972; Franz Lehner, Nostalgie einer Disziplin oder die Revolution, die nie stattgefunden hat, in *Politische Vierteljahresschrift,* 15(2), 1974, 245-256.

5 Cf. Patrick Suppes, *Introduction to logic,* Van Nostrand, Princeton etc. 1957, pp. 152 ff.

6 As in Ward Edwards and Amos Tversky (eds.), *Decision making:* selected readings, Penguin Books 1967; Wayne Lee, *Decision theory and human behaviour,* Wiley, New York etc. 1971

7 For example James M. Buchanan and Gordon Tullock, *The calculus of consent: logical foudations of constitutional democracy,* Un. of Michigan Press, Ann Arbor 1962; Anthony Downs, *An economic theory of democracy,* Harper, New York 1957; Norman Frohlich et al., *Political leadership and ocllective goods,* Princeton U.P., Princeton 1971; R. L. Curry and L. L. Wade, *A theory of political exchange: economic reasoning in political analysis,* Prentice-Hall, Englewood Cliffs 1968; Gordon Tullock, *Towards a mathematics of politics,* Un. of Michigan Press, Ann Arbor 1967; Th. A. Stevers, Een economische ana-

lyse van het democratisch proces, in *Sociale Wetenschappen,* 11(1), 1968, 37-70; Bruno S. Frey, Die ökonomische Theorie der Politik oder die neue politische Ökonomie: eine Übersicht, in *Zeitschrift für die gesammte Staatswissenschaft,* 126(1), 1970, 1-23; J. A. M. Klaver en J. G. Siccama, Integratie van politicologie en economie, in *Acta Politica,* IX(2), 1974, 125-161.

8 As by J. van den Doel, *Demokratie en welvaartstheorie: een inleiding in nieuwe politieke ekonomie,* Samson, Alphen a/d Rijn 1975. In certain quarters, though, this sort of analysis is claimed to be of a specifically 'leftist' or marxist flavour, cf. for instance H. Safa, Aanzet tot een politieke ekonomie van de familie; vrouwen, werk en industrieel kapitalisme, in *Sociologische Gids* 75(4) 1975, 297-304.

9 In particular in George C. Homans, *Social behaviour, its elementary forms,* Harcourt, Brace, and World, New York 1961; Peter M. Blau, *Exhange and power in social life,* Wiley, New York 1964; Sidney R. Waldman, *Foundations of political action: an exchange theory of politics,* Little, Brown, Boston 1972.

10 This defect comes particularly vividly to light when game theory is applied. For the determination of he pay-off marix does already presuppose an understanding of the political process itself, of which the pay-offs represent the outcomes – *but which does not itself produce such understanding.* Cf. my review of William H. Riker and Peter C. Ordeshook, *An introduction to positive political theory,* in *Acta Politica,* IX(4), 440-446.

11 As by Robbins, as quoted by Van den Doel, op. cit., p. 23.

12 In what follows, then, I will presuppose, but not myself construct (a system of) ordinal numbers satisfying he several axioms described in the text. See for a set-theoretical construction of ordinal numbers and a similar definition of operatons upon them as described in the text, in particular Seymour Lipschutz, *Theory and problems of set theory and related topics,* Schaum, New York 1964, pp. 166 ff.

13 It is especially in theories of 'cognitive consistency' that the importance of inconsistencies, of which non-transitivities merely represent a subset, for the growth and adaptation of human judgment has been recognized. See, for a relatively complete discussion of such theories, Robert P. Abelson et al., *Theories of cognitive consistency: a sourcebook,* Rand McNally, Chicago 1968.

14 That this axiom is symbolized by an S derives from the its rather special place in the theory as developed in 'Foundations'. In fact, it is a particular interpretation of a more general axiom-scheme on selections which also allows for other interpretations, notably in the theory of human learning, here defined to be concerned with the formation and change of particular behavioural sets to apply in specific situation.

15 It is to be emphasized here that to *ask* people their preferences and probability judgments, their attitudes and insights, does not at all automatically produce what actually underlies their behaviour in specific cases -as skeptic and prudent people knew all along, of course. For in principle the verbal behaviour thus elicited is based upon its own specific preferences and probability estimates -which suggests extreme caution, if not reluctance, regarding the application of interviews, questionnaires, and surveys.

16 See on this notion of rationality Koen Koch, *Rationaliteit en Rationeel gedrag: definitie en hypothese* in *Acta Politica,* XI(3), 1976.

17 It should in particular be mentioned that as this behavioural theory rests ultimately upon behavioural sets, *i.e.* alternatives ordered with respect to utility, preference and probability, to be given, its actual application in all cases requires specific explicit assumptions or even a special theory about these matters. As intimated already, this is a problem of learning theory and will not be discussed here.

18 As used by Duncan Black, *The theory of committees and elections,* Cambridge U.P., Cambridge 1963, p. 4.

19 See my De wetenschap der politiek: het vraagstuk van een definitie, in *Acta Politica,* 4(1), 1968, 55-81.

20 Cf. A. Hoogerwerf, *Politicologie: begrippen en problemen,* Samson, Alphen a/d Rijn 1972, 37.

21 Cf. Johannes Althusius, *Grundbegriffe der Politik* – aus *Politica methodice digesta,* 1603, Kloostermann, Frankfurt A/M 1948, 13.

22 Harold D. Lasswell, *Politics: who gets what, when and how,* McGraw-Hill, New York 1936.

23 Harold D. Lasswell and Abraham Kaplan, *Power and society: a framework for political inquiry,* Yale U.P., New Haven – London 1950, XIV; Robert A. Dahl, *Modern political analysis,* Prentice-Hall, Englewood Cliffs 1963, 6.

24 Bertrand de Jouvenel, *The pure theory of politics,* Cambridge U.P., Cambridge 1963, 30; Neil A. McDonald, *Politics: a study of control behaviour?* Rutgers U.P., New Brunswick 1965, 9.

25 Morton A. Kaplan, *System and process in international politics,* Wiley, New York 1957, 14.

26 David Easton, *A systems analysis of political life,* Wiley, New York 1965, 21.

27 William H. Riker and Peter C. Ordeshook, *An introduction to positive political theory,* Prentice-Hall, Englewood Cliffs, 1973, 2.

28 Curry and Wade, *op. cit.,* X.

29 Which also applies to my own interpretation of Easton's definition in '*De wetenschap der politiek, etc.,* of course.

30 It is not too difficult to see that this includes influencing someone's behaviour by providing him with new alternatives hitherto physically impossible -as in providing him with a rocket which renders travel to the moon possible. For, if it is realized that an impossible alternative has a zero probability of being chosen, it can always be introduced in any behavioural set as a 'dummy', so to speak, and as long as it is in fact physically impossible. Now to render it actually possible can indeed be interpreted as increasing that alternative's utility just as in any other case of demand behaviour. Cf. my 'On some problems of political theory', in Brian Barry (ed.), *Power and political theory,* Wiley, New York 1976, 161-179, in particular p. 172.

31 Thus, such 'economic' behaviour as buying and selling represents particularly 'stylized' forms of demand behaviour: offering money and goods or services, respectiveley, in order to increase the probability of the seller giving you his goods or services, or the buyer giving you his money.

32 See in particular my *De wetenschap der politiek,* pp. 75 ff.

33 Cf. his *The governmental process: political interests and public opinion,* Knopf, New York 1963.

34 It is this too, which is at issue in political research dealing with networks of communication as in Helmers et al., *Graven naar macht,* Amsterdam, Van Gennep 1975.

35 The argument also shows why politicians and other people will normally attach such a high value to their reputation of reliability and credibility, and how extremely important considerations of prestige must be.

36 We should clearly distinguish the *force* of demand behaviour from its *intensity* (demand intensity; Du.: vraagintensteit). The former is determined by the *adressee's evaluations*. The latter represents the risks and sacrifices involved in demand behaviour *as judged by the agent himself*. The two need not at all be commensurate.

37 It does not matter here whether we are or are not *in fact* capable of distinguishing such sub-processes during the period in question, and whether the process is a continuous or a discontinuous one. Of course discontinuities may occur in that the process itself will produce changes of in its parameters, as when it results in a different distribution of strength and riches, interdependence and position. But again, this does not invalidate the construction described in the text in principle.

38 The static conception of political outcomes as end results is not only theoretically invalid, but also practically dangerous. It is embodied most clearly (and how commonly!) in the final solution, the radical reform, the really new start, and the definite remedy of the prophet, technocrat, or simply politically naïve. Resting as they do upon actually putting an end to demand behaviour, except that of their protagonists, their solution and remedy, their brave new world and peace, must be those of the graveyard – mostly literally so.
The counterpart to this conception is the tendency to take existing outcomes, as for instance the national constitution, the liberty and security of individuals and groups, the position of the government, or the international 'balance' of power and influence, peace and security, for granted. That is, it is forgotten that such things rest upon continuing effort, and that, when this is not forthcoming such outcomes as well as the values they may represent necessarily and unavoidably go, too.

Actuele documentatie

Wijziging van de enquêtewet [1]

door G. Visscher

1 Inleiding

Zoals bekend beschikt het Nederlandse parlement over het recht van enquête. Artikel 105 van de Grondwet kent dit recht aan de Staten-Generaal toe:
'Beide Kamers hebben, zowel ieder afzonderlijk als in verenigde vergadering het recht van onderzoek (enquête), te regelen door de wet'.
Dit artikel stamt uit 1887. De Grondwet van 1848 bevatte ook al een artikel over het parlementaire recht van enquête, doch kende dit recht alleen aan de Tweede Kamer toe.
Het recht van onderzoek is geregeld in de z.g. Enquêtewet.
Deze Enquêtewet is in 1850 door de Staten-Generaal aangenomen en sindsdien verschillende malen aangepast en gewijzigd, voor het laatst in 1948.
Behalve in de wet is de wijze van uitoefening van het recht van enquête nog geregeld in de Reglementen van Orde van de Eerste en Tweede Kamer. Hoofdstuk XIV van het Reglement van Orde van de Tweede Kamer (RvO II) is er speciaal aan gewijd.[2]
Wat is een parlementaire enquête?
Een *parlementaire enquête* is een onderzoek door het parlement, dat hiertoe een commissie instelt, die over vergaande bevoegdheden beschikt.
De begrippen enquête en onderzoek zijn, in dit verband, synoniemen. Elke associatie van het hier gebruikte begrip enquête met een bepaalde vorm van opinie-onderzoek is daarom misplaatst.
De Kamers hebben slechts zelden van hun recht van enquête gebruik gemaakt. De Eerste Kamer zelfs helemaal niet. De Tweede Kamer heeft sinds de belangwekkende enquête uit 1886–1887 naar de arbeidsomstandigheden in fabrieken en werkplaatsen, alleen nog maar een onderzoek ingesteld naar het beleid van de verschillende kabinetten tijdens de Tweede Wereldoorlog. Dit laatste onderzoek wordt wel de Oorlogs-enquête genoemd.
Onlangs hebben enige kamerleden een voorstel bij de Tweede Kamer ingediend tot wijziging van de Enquêtewet. Zij hopen, dat het recht van enquête na wijziging van de wet weer betekenis voor het parlement zal gaan krijgen.