USING AND DEFENDING COGNITIVE THEORY

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1984

gnitive Science Research Paper

rial No: CSRP 033

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Revised version of an invited paper prepared for the symposium on Language and Knowledge? AI and Sociological Approaches, University of Surrey 27-28 March 198*4. To appear in G.N. Gilbert and C. Heath, eds., Social action and artificial intelligence. (Gower Publishing, Aldershot. January 1985)

May 198U.

Using and Defending Cognitive Theory

Trevor Pateman[1]

1. Introduction

The papers in this collection fall, it seems to me, into two groups: those concerned with the modelling of human interaction or replication of its characterisitic features in human-computer interaction and related issues; and those concerned with relationships between theorising in the cognitive paradigm and social theory. This article belongs in this second category, as do those by Bateman, Coulter and Good. These three authors in effect find the individualism and mentalism of most work in the cognitive paradigm a serious shortcoming. For Bateman and Good these defects are remediable if proper attention is paid to relevant approaches in social theory and social psychology (sa Heidegger, Schutz, Mead). For Coulter, the later philosophy of Wittgenstein undermines the pretensions of cognitive theorising à la Fodor and Dennett, and leaves room for Artificial Intelligence only as an engineering science, not a model of the mind. In contrast, my paper looks to the individualism and mentalism of cognitive theory as a source of enrichment for social theory. In section 2, I endeavour to illustrate this possibility by considering how the theory of ideology might be developed by using a cognitivist theory of the mind, that is

characteristically brought against them: here I make a fair amount of reference to Coulter's work. And in section k_9 I reflect on a distinct: between the personal and subpersonal levels of the human organism, whi< appeared in some of the papers contributed to the symposium (including Bateman's and my own) and which took on an independent life at the symposium as an apparent way of dissolving disagreements between cognit: and anti-cognitivists.

2. Mind as the Missing Third Term in Nature - Culture Arguments.

From the standpoint of sociology, classical political theory standi accused of having sought to derive claims about society - about possible and desirable forms of association - from claims about human nature. Sociologists thinks that Marx summed up the mistakeness of this approacl when he wrote in the sixth Thesis on Feuerbach, "the essence of man is no abstraction inherent in each single individual. In its reality it is the ensemble of the social relations", though at least one Marxist now thinks that is the wrong way to read the sixth Thesis: "Marx did not reject the idea of a human nature. He was right not to do so" (Geras 1983, p.ll6). From the standpoint of political theory and, more generally, of philosophy, sociologists stand guilty of assuming a particular theory of human nature in the very moment of their denial that there is any such thing as human nature. For in order to sustain their preferred account of enculturation and socialisation, sociologist! have to assume the plasticity of human matter to cultural and social shaping, and that is a theory of human nature. At the level of detail, the job of giving this account is passed over to a social psychology

social psychology textbooks of the 1950's and 1960's. Despite attempts bring men back in (Homans 1964) and protests against the oversocialized conception of man in modern sociology (Wrong 1977), this sociologism (as I shall call attempts to exclude the idea of human nature from social theory) is alive and well in the 1980's. Here, for example, is an influential Marxist sociologist writing about ideology:

> From what is known about the ideological plasticity of human beings and their creative capacities, we should expect the given ideologies to be almost completely reproduced in societies whose internal conditions and relationships to the natural environment and to other societies remain exactly the same from one generation to the next. (We would have to allow for only a small margin of individual 'misfits' stemming from the irreducibility of psychodynamic processes to complete social control). A parental generation will always mould its children according to its own form of subjectivity; and if the ecological, demographic, socio-economic and inter-societal relationships remain the same, the younger generation will face exactly the same affirmations and sanctions of the existing ideologies as the parental one. It follows that the explanation/investigation of the generation of ideologies will have to start from processes of change in the structure of a given society and in its relationships to its natural environment and to other societies. It is these changes that constitute the material determination of the rise of ideologies.
>
> (Therborn 1980, p.43)

- to which the only proper response is "Amen", since Therborn is engaged in nothing more here than the ritual repetition of the differenc which establsih modern sociology as what it is, evading the specific cha of psychoanaliysis with a parenthetic concession.

Now the parenthesis might indeed tempt the classical political theorist, the Freudian or Dennis Wrong to attempt a war of attrition on

dialectical account of 'the individual' (as site of nature) and 'society' (as site of culture, here in the form of ideology). However, what I want to suggest is that attention to recent cognitive science, as theories of tl mind or mental representation, can allow a move outside the boundaries set by Therborn's text and his parenthesis onto ground where a much more fertile account of the life of ideology in the individual and society night "be possible.

Therborn has no theory of the mind except a default account which gives it those properties whichallowthe dreary business of "complete reproduction" to go on. And the moment one considers what a plausible thec of the mind would actually look like, it is clear it would not sustain sucl "complete reproduction" but would rather suggest that even in the absence of environmental changes, ideologies would always tend to change - and not because of the presence of a few "misfits" but because of the operatioi of ordinary, normal mental processes. Ideologies on any plausible cognitivist account do not display Newtonian inertia but Heraclitean flux. How so?

What Therborn calls a parental generation provides what I shall call a learning generation with at least two kinds of ideological material first, representations of actions, events, experiences, situations etc. made accountable through an ideology; second, rules of an ideology throug which events etc. are supposed to be made accountable. In the first case the learner's task is to arrive at a competence in the ideology and the favoured cognitivist construal of such competence is that the learner's competence takes the form of a mentally represented generative theory whic could, for example, be modelled in a computer program. Now short of there being very rigid constraints on the class of learnable ideologies,

such that one should really think of ideologies as archetypally represented In the (collective) unconscious, of which incoming information merely prove bhe remembrance, then it is no more than the application of a general theoretical principle to say that the representation of an ideology vhich my individual learner will arrive at will be underdetermined by the data 'the accounts of the parental generation) on which it is based. In other fords, there can be no principle of induction which could lead the learner Prom a set of data to the theory or ideology which generated it. Furthermo it least sane of the cognitive processes involved in the derivation of a productive mental representation of an ideology will be inaccessible to introspection and, hence, in principle not controllable in their operation >y reflexive self-monitoring (in the sense of Giddens 1979) of the processes of ideological growth. This entails that if the learner's iccounts generated from his or her mentally represented ideology are in my way unsatisfactory - attracting sanctions (negative reinforcement) ror instance - then the learner may only be capable of responding by aaking ad hoc adaptations which modify "the output of the mentally represented ideology without altering its fundamental or core structure, since the learner doesn[f]t have (computational) access to all that is $oing on in the development of a mentally represented ideology. (Cf Lndersen 1973; Fodor 1983)«Underdetermination and inaccessibility .dentify sources of ideological transformation generated independently of t mvironmental changes Therborn lists as necessary and sufficient conditions of ideological change. What Therborn has 'overlooked[1] .s that the mind is itself an environment for ideology, and an environment rtiich is intrinsically creative. And note that in locating at least part

on my account, ideologies are as much things to which individuals are liable as things of which they are capable*[2] It is just that liability is no longer equated with a tendency to reproduce unchanged (Therborn's Nevtonian doctrine) but rather with a tendency to reproduce in changed form (the Heraclitean doctrine). Ideology is inherently variable.

What happens on this cognitivist account if we consider not the growth of competence in an ideology from the evidence of accounts but the inculcation of an ideology as itself a set of rules - what one might call the catechism model of ideology? To be sure, individuals are quite capable of learning and repeating lists, but the moment they try to use their lists (their rules) as a basis for judgement (for giving accounts) underdetermination intervenes to make it the case (here I agree with the Wittgensteinians[3]) that the rules do not determine the judgement, even though the rules can be perfectly determinate in the mind (here I disagree with some of the Wittgensteinians - see Section 3 below). How else could casuistry be possible? But since cases are no more determined by principles than theories by data, there is no protection in catechisms from the tendency to ideological variation*

The points made in the previous paragraphs generalise to any form of representation. An apprentice to a system of visual representation (a visual ideology for a writer like Hadjinicolau **1978)** is presented with both instances or exemplars of the'system of representation in use and with explicitly formulated rules of the system (in drawing manuals, for instance). Yet even in the training routines of the most hidebound academies (of the sort described in Grosz 1982, say), the apprentice necessarily 'internalises' the system of representation idiosyncratically, that is, as a visual idiolect (what we call individual style). Because we are at home with

'artistic creativity' this fact does not strike us as at all remarkable, yet it is strictly unaccountable within Therborn's framework.

So far in this sketch I have, like Therborn, assumed environmental constancy. But the cognitivist model I have been sketching (very lightly, I realise; some of the issues are treated at greater length in Pateman (forthcoming a)) also holds the prospect of providing a theory of how environmental change gets into the mind and hence into the process of ideological reproduction without it being necessary to postulate bad faith on the part of the individuals. For example, suppose that in the abduction or growth of mentally represented ideologies from accounts or the derivation of case judgements from principles there were preference r involved (for one account of preference rules see Lerdahl and Jackendoff 1983). Then one could argue that a changing environment acts on individua below the level of conscious awareness or of the introspectible mind, causing alterations in their preference rule orderings and weightings and yielding ideological change as output. On similar lines one could reintroduce affective and instinctual components into what may have seemed an overly intellectualist account - and, of course, simulations of hot cognition were among the earliest achievements of AI (I am thinking of Colby's and Abelson's work, reviewed in Boden 1977, chapters 2-4).

In sum, I have tried to suggest how through cognitive theory we can bring the mind back into the theory of ideology, and with it incorporate an autonomous learning - or cognitive development - theoretic element into theories of ideological and, more generally, cultural change. But the viability of the Heraclitean model I have sketched crucially depends on sustaining a viable cognitivist concept of mind in the face of considerabl

3. Defending a Cognitivist Concept of Mind

What anti-cognitivists find most objectionable in cognitivism is th postulation of non-introspectible mechanisms with a representational character in the explanation of human actions of various sorts, though what in particular they object to varies from case to case. For some, it is mentalism which is objected to, the apparent postulation of entities which are not plainly neurological,phenomenological or behavioural. For others, it is the individualism which is objected to, particularly when the characterisation of non-introspectible mental phenc is tied to nativist theories of their origin, as in Fodor's language of though hypothesis and Chomsky's theory of universal grammar. Jeff Coulter, for one, objects to both the mentalism and individualism of cogn theories. (Coulter 1979, 1983). But why? In all the critical literatur I have read, three main lines of criticism seem to recur. The remainder this section surveys and responds to these criticisms in a very general way, which for the most part avoids detailed textual exegesis.

The first line of criticism of cognitivism simply denies the existen of the mental entities cognitivists postulate; there is simply no fact of the matter to have theories about. So Quine 1972, in a well-known criti of Chomsky, distinguishes the idea of a rule guiding our behaviour from t idea of a rule fitting it, and argues that the rules postulated by lingui do not model or represent any rules which guide our behaviour, since ther are no such rules; but they can fit our behaviour, in the sense of displ its law-like regularity; our behaviour can then be said to accord with

reflection Coulter would probably agree that Quine's assimilation of rules to registerings of behaviour regularities fails to capture the normativity of rules on which Wittgenstein insists. (More on this in a moment.) In the writings of someone like Dreyfus 1979 the 'no fact of the matter' idea is used in the argument that the way computers do things is irrelevant to our understanding of how humans do apparently equivalent things: just because a computer program needs a restaurant script to understand goings-on in a restaurant in no way implies that there's a Wimpy Bar script in my head which allows me to succeed in gett served with a hamburger.

The positive programme of Quine and others (e.g. Cooper, 1975) substitutes dispositions to behaviour or just behaviour itself for the guiding rules appealed to by Chomsky and other cognitivists. This has always struck me as a case of giving up on the attempt to explain behaviour in favour of its mere redescription, something Wittgenstein sometimes recommends[4]. In effect, Quine and Cooper do not offer alterna explanations to those offered by Chomsky; they offer no explanation at And that is consistent with the fact that Quine's ontological scepticism about the existence of rules which guide behaviour is actually motivated by an epistemological scepticism about the knowability of such rules, an explains why in answering Quine, Chomsky appeals to philosophical realis in both its ontological and epistemological senses. I don't want to lab this; the relevant texts include Chomsky 1975 around pp 180-190. What I do want to emphasise is the common but illicit derivation of an ontolo scepticism about the existence of mental entities from an epistemologica scepticism about their knowability. Kripke 1982, for example, begins b

es into an epistemological frame when discussing Turing - machine and
ogous functionalisms. Thus, he writes of such theories that

> all regard psychology as given by a set of causal connections, analogous to the causal operations of a machine. But then the remarks of the text stand here as well: any concrete physical object can be viewed as an imperfect realization of many machine programs. Taking a human organism as a concrete object, what is to tell us which program he should be regarded as instantiating
>
> (Kripke 1982, pp36-37)

quotation makes explicit what I distinguish as the second line
riticism of cognitivism, the line that whatever the fact of the matter
be, there is no knowable fact of the matter and hence no possibility
science of such facts. The support for such scepticism is almost always
ided by the theory, due to Goodman, Quine and others, that theories are
rdetermined by data, which generalises to the claim that mechanisms are
rdetermined by their effects, and if only effects are observable then
ave no means of knowing which mechanism (which program in the Kripke
e) they are the effects of. Coulter 1983, p.54 and p.57 borrows this
ment from Cooper 1975. It is very widespread.

The underdetermination thesis is not in dispute (at least not
present purposes): the thesis is so obviously true as hardly to
orth discussing, remark Chomsky and Fodor (Chomsky and Fodor 1980,
1). But, they would add, if theories weren't underdetermined by
, we would have no need of scientific hypothesis and experiment, and
ossibility of falsification by counter-instance. There is not only
ing threatening to the cognitive paradigm in the epistemological
tic's argument; there is nothing threatening to any science.

If mentally-represented grammars are theories of the data constitut by linguistic input, then they are hopelessly underdetermined by that data - neither an algorithm or any relatively simple discovery procedure could recover the virtual grammatical structures of the linguistic input. How, then, are mentally represented grammars possible? Chomsky's answer is that they are possible because the human organism has an innate endowm universal grammar, a Language Acquisition Device, which as it were meets data half-way, Chomsky initially elaborated this idea as a Peircean theory of abduction, or hypothesis formation (Chomsky 1968, for example) though this gave the rather misleading impression of the child-as-subject as a little linguist. Chomsky now specifies his theory with the help of biological, organismic metaphors more appropriate to capturing the subjectless aspects of language growth or the fact that grammars are things to which we are liable, rather than things of which we are capable (see Chomsky 1975 and 1980 especially).

In sum the second line of argument against the cognitive paradigm, argument from epistemological scepticism, is not only perfectly general rather than specific to the cognitive paradigm, but has been used as an argument in favour of their position by cognitivists defending a realist ontology and epistemology.

I turn now to a line of criticism of any theory that postulates non introspectible rule-following inthe explanation of behaviour which will be familiar to sociologists: the argument that rule-following cannot be a private (mental) or individual (non-social) affair because rules are normative and norms are necessarily public and social. I shall call this the *vulgar normativity argument*. This most famously [illegible]

Winch" (Beardsmore 1982; but see Winch's own review: Winch 1983). I thin
it is worth tracking Kripke's position in some detail despite the fact tha
one has to engage with a text which, as Beardsmore remarks, fights a
losing battle with its footnotes. So in note 77 (Kripke 1982, p.97),
Kripke says that modern transformational linguistics (which stands here
for cognitivism in general) does not offer, "a purely causal
(neurophysiological) explanation, in the sense explained in ..... note 22
above". Turning to note 22, we find that Kripke claims that "the notion of
'competence' [in Chomsky - TP] is itself not a dispositional notion [or a
mechanical one, as Kripke indicates later in the footnote - TP]. It is
normative, not descriptive, in the sense explained in the text." (p.31).
Turning to the text, we find 'normative' explicated in a standard enough w
for example, Kripke writes, "The point is not that, if I meant 'addition'
by '+', I will answer '125' [when asked to add 68 + 57 - TP] but that, if
I intend to accord with my past meaning of '+', I should answer '125'"
(p.37). And, so the Wittgensteinian argument goes,[6] this rule-normativit
can be a feature only of public or social rules, not as Chomsky imagines
private or individual mental ones.

Now what I wish to argue against this is that the notion of
competence, in Chomsky's sense is clearly not normative, in whatever
sense addition is normative, and that the principal reason why Kripke
ends up with long and fairly inconclusive footnotes (footnotes 22, 24 and
77 notably) about cognitive psychology in general and Chomskyan linguistic
in particular is because he expounds Wittgenstein's private language argum
entirely with an example drawn from the domain of arithmetic (the addition
of 68 and 57) and nowhere considers the differentia of language. Yet even
a short survey will indicate the unlikeness of natural numbers and natural

Kripke gives a standard account of the communal character and norma of the rules of addition (see p.89-93): there is a child and teacher; th teacher corrects the child's mistakes; when the child can go on with few mistakes we say it has 'mastery' of addition; if it cannot achieve that "simply cannot participate in the life of the community" (p.92); fortun most of us manage to get the hang of addition, so that we can rely on the grocer to give us five apples if we ask for five apples (p.92); and so on This may or may not be a good picture of what arithmetic (or the situated social-practiceof doing arithmetic) is, but it is certainly hopeless as a picture of what natural language is.

First of all, for what it is worth, there is the evidence of Feldman, Goldin-Meadow and Gleitman 1978 that linguistic input is not a necessary condition of the growth of the rudiments of a linguistic sys Second, teachers (parents in this case) cannot correct a child who is in the process of extending or inventing a language of which the teachers do not have mastery - and this is the case in the relationship between pidgin-speaking parents and their creolising children (Bickerton 1981).[7] Third, and much less contentiously or peripherally, though there is one s of right answersfor all addition problems, there is at least one language (one idiolect) per person, and even in societies with prescribed standa languages, speakers of non-standard forms manage to participate quite well - at least as far as these philosophical disputes are concerned - in the life of the community. My grocer gives me five apples when I ask for five apples, despite the fact that his phonology and syntax differ f mine - and though I would correct him if he gave me four apples instead of five, I would not dream of correcting his phonology or syntax, nor he

or she is tryingto elicit indexical or symptomatic (causally-related) e" for the character of underlying mental representations, and not at all seeking normative views of acceptability. Consider the three sentences presented below, taken from Lightfoot 1982, p.IT:

(1) Who did the woman meet in town?

(2) Who did you believe that the woman met in town?

(3)* Who did you see the woman that met in town?

Chomskyans expect that anyone capable of following this paper wil! judge sentences (l) and (2) grammatical (or well-formed) and sentence (: as ungrammatical. They will go on to argue that there is likely to hav< been no occasion when as a child you produced anything like (3) and were corrected, nor anjrthing in "tœ input you received which ruled out tl derivation of (3) by extension or generalization of the interrogative-f< rules responsible for (l) and (2). They will then hypothesise that thei is a constraint or condition on rules of grammar (in this case called tl subjacency condition) which forms part of Universal grammar (the innate program for the growth of linguistic competence) and which accounts for intuitions we have about (3).

Note that in this case the Chomskyan expects you to agree in your intuitions about (3), but does not regard this agreement as reflecting anything <u>social</u> about these intuitions of grammaticality: the agreejneni we appear to reach is <u>distributive</u> rather than <u>collective</u>, and in an important sense, <u>not normative</u>. It is distributive in the sense that each of us can and does arrive separately at our intuition about (3) without teaching or discussion or simple extension of what we have lean by teaching or discussion or simple extension of what we have learnt by

of convention, in the sense of Lewis 19&9* Furthermore, my intuition would still stand even if others did intuit that (3) was grammatical (Lightfoot paraphrases its potential meaning as, "who is the person such that you sav the woman who met that person in town?"). In sum, in relat to grammaticality I may well "be able to guess or predict that others wil judge like me, since we share a form of life - a species specific endown according to Chomsky. But I cannot judge that they ought to judge like my intuitions have none of the authority which arithmetical judgements h Kripke's account - see e.g. p.91 for the use of "authority" in this conne Language (at least, phonology and syntax) differs from mathematics (at least, elementary arithmetic) in that in the case of language it seems both possible and necessary to distinguish between 'rules' as law-like an causal-explanatory and 'rules[1] as normative. (Of course, there is a psyc of arithmetic too. The question is whether there can be an appropriate analogue of anti-psychologism in arithmetic in linguistics. I don't think there can be). In short, Chomsky is not a prescriptive grammarian and his project cannot be undermined by the rule-normativity version of Wittgenstein's private language argument, which figures so prominently in what I call sociologizing theory - theory that always wants to rewrit 'natural[1] or 'mental' as 'social'.

Returning to the example of ideology used in section 2, it can certainly be granted that ideologies are normative and are deployed in normative social practices. But that does not exclude that there is a non-normative mental representation of ideologies which includes rule-like but non-introspectible components and which the scientist can best characterise in rule-like form.

4. The Personal and the Sub-Personal: Beliefs and Sub-Doxastic States

The previous section concluded with the suggestion that ideology could be thought of both as deployed in normative social practices, where it is intrinsically public and social in character, and as a non-introspe mental representation. My original paper concluded with some remarks based on Stich 1978 which sought to explain this distinction. In this newly-added section, I try to make something more of the distinction, hel by discussion at the Symposium and subsequent reading of Stich 1983. In effect, the distinction proposes a division of labour between the social scientist and the cognitive scientist; the former engages in such activi as ascribing beliefs to persons (subjects), the latter attributes states and processes to organisms.

Sociologists and anthropologists do not need to be told that it is often a very tricky business indeed to decide what belief to ascribe to some person, especially if that person is mentally ill or belongs to an exotic culture. Stich 1983 argues that this is, in part, because our everyday (folk psychological) concept of belief attributes beliefs to oth on the basis of presumed similarities to ourselves, rather than on the basis of strict identities. Thus Stich argues that when we say 'S belie that p' what we mean is that S is in a belief state similar to the one which would play the typical causal role if my utterance of "p" had had a typical causal history (Stich 1983, p.88). Furthermore, and more importantly in the present context, the content of someone's belief stat is not specifiable independently of facts about the context in which the believer is situated. If this is so, the claim of a mentalist and

case for the context - dependence of belief ascription?

Essentially, they are the arguments of Putnam 1975 and Burge 1978 - arguments which are continuous with the Wittgensteinian private languag argument, discussed in section 3 above, but much more clearly and persuasively presented. The upshot of them is to place persons, beliefs and meaning in the public and social sphere. Here I'll illustrate the general form of the argument with an example from Burge's influential paper 'Individualism and the Mental' (Burge 1979). Stich tidies up Burge's argument, but for present purposes I think we can work from it.

Burge invites us to contemplate a man who has and believes he has arthritis in the ankle, wrist, etc. waking up one day with a pain in his thigh and going off to the doctor to report that he believes his arthrit has spread to his thigh. Not, it hasn't, says the doctor, arthritis is a disease of the joints. Compare this, says Burge, with a community whe everything is the same except that doctors etc. believe that you can hav arthritis of the thigh - a community, in other words, which has a differ concept of arthritis from our one. Burge's central idea is that though the second community has a different concept of arthritis from us, the individual in the first community does not, despite his erroneous belief It would be wrong, Burge thinks, to reconstruct the content of his thoug in such a way that he comes out believing something other than that he h arthritis in his thigh, say that he has tharthritis. If this is so, it follows that the meaning of "arthritis" isn't in his head, since what's his head is inconsistent with the meaning of "arthritis". Further, the content of what's in his head is partly constituted by something outside his head in the community: we say he believes he has arthritis in his

Phis kind of argument ought to "be congenial to Coulter, who objects againsi cognitivism that it 'Iremoves us farther away from the study of man as he conducts his life in social settings." (Coulter 1983, p.158). But is it indeed an argument against all forms of cognitivism?

Stich argues that the Putnam-Burge critique of individualism in semantics does indeed undermine cognitive theory if this theory takes the form of what he calls a representational theory of mind (RTM). An RTM can take two forms, either strong or weak; the weak theory assigns content bo non-introspectible sub-personal mental representations, the strong theory additionally assigns a causal role to the content of such represent* in the explanation of mental processes. Either kind of theory is undermine by Putnam-Burge anti-individualist arguments. But cognitive theory need not take the form of an RTM; it can also take the form of a syntactic theory of mind (STM) which assigns to non-introspectible sub-personal representations only formal, syntactic properties: the organism has sub-doxastic states, not beliefs (Stich 1978). What does this mean, and what difference does it make?

An STM, like any cognitive theory, posits an intermediate level of reality between neurology and what one might call social phenomenology. It is still the sort of theory to which, say, Dreyfus would object: "conceptual confusion ... results from trying to define a level of discoun between the physiological and the phenomenological" (Dreyfus 1979,p.182). For, as Stich puts it,

> The core idea of the STM - the idea that makes it syntactic - is that generalizations detailing causal relations among the hypothesized neurological states are to be specified indirectly via the formal relations among the syntactic objects to which the neurological state types are mapped. Similarly, generalizations specifying causal relations between stimuli and neurological states will identify the neurological states not by adverting; to their essential

The virtue of an STM theory, for Stich, is that it makes no use of the vague and inherently social concepts of folk psychology. It is strictly theory of the individual organism, which is what Stich thinks psychology must be (as does Fodor 1981, chapter 9 which also advocates an STM in response to Putnam-Burge type criticism). As Stich says, "STM theories are able to characterize the cognitive states of a subject in terms apprc to the subject rather than in terms that force a comparison between the subject and ourselves" (Stich 1983, p.158).

All this adds up to the outline of a possible division of labour between the social scientist and the cognitive scientist. But if there i a division, there is also a connection. Just as syntactically-specifiabl states run on neurological states, as urged by both type and token physic so beliefs run on syntactically-specifiable states though certainly not i a way which allows type - type correlation, rather in a way which allows token - token correlation.[9] Stich writes of the states postulated by cognitive theory as subserving the beliefs and desires ascribed to person by folk psychology (e.g. p.176).

Now the claim I would wish to make is this: that though both the sub-personal and personal levels enjoy a relative autonomy of operation, the autonomous operation of sub-personal processes which I have character as underdetermined and inaccessible to introspection (see Section 2 above has consequences for the kinds of beliefs which can plausibly be ascribed to subjects at the personal level and which, specifically, is a cause of variation in plausibly-ascribable beliefs. Put differently, we could say that though the content of a belief 'ends up' being specified and

I don't know what Stich would make of this idea, but something like it needs to be true if the project sketched in Section 2 is to be defende against the serious threat posed to all cognitive theory by the anti-individualist arguments of Putnam, Burge and others. Something like it certainly seemed congenial to those at the Symposium (Bateman and Coulter especially) who deployed the personal/sub-personal distinction. But I should perhaps note in conclusion what I said at the Symposium: that it is far from clear where to draw the line between the personal and the sub-personal and equally unclear whether the personal can be equated entirely with the social or cultural, and the sub-personal with the mental or natural.

For example, in cases of hysterical paralysis the paralysed part of the body will correspond to a body-part as defined in folk terms (arm, leg, etc.) not to a neuro-physiologically distinguished part of the body (see Boden 1981, chap. 2). In this case, whether the description an explanation of the paralysis should be pursued in personal or sub-personal terms or both is unclear: the distinction does not solve any theoretical problems, though Stich 1983 claims that one of the virtues of an STM is that it allows for a unified explanatory theory which treats the mentally ill, along with children and members of exotic cultures, in the same way The problem posed by the case of hysterical paralysis for Stich seems to to be this: that the explanation of hysterical paralysis seems to involve necessary reference to a folk-level concept (contentful, semantic, etc) operating at a level where an STM approach (i.e. formal, syntactic) is supposed to be adequate.

Again, to equate the personal with the social and cultural - so that

the lines, say, of Trevarthen 1979) should be true. In relation to ch 1983 the problem is simply that though he discusses the nature of lieves[1] and $^{f}p^{f}$ in the locution ^{f}S believes that p^{f}, he nowhere discusses nature of S. To open up that issue is beyond the scope of this paper; ficient to say that while defenders of Al and cognitive theory like nett claim that it has solved the homunculus problem (see Dennett, 1978, pter 7)$_{9}$ it has had very little to say about the nature of the son, the subject which emerges from the hommelette.

Footnotes

1. My thanks to the Editors, my fellow-participants in the Symposium and to Margaret Deuchar for helpful comments on the style and substan of this paper, which is effectively a companion piece to Pateman forthcoming a where arguments similar to those deployed here in relation to ideology are developed in relation to language.

2. The contrast I use here between capacities and liabilities is a metaphorical extension of the use of this distinction in Harré and Madden 1975.

3. But on this point so does Fodor who, answering Dreyfus and Wittgenstein, writes that "there is nothing in the notion that people's use of language is rule-governed which suggests that every predicate in a language must have a determinate applicability to ever object of predication". (Fodor 1975, p.62).

k. Schatzki 1982 endorses the recommendation. See Pateman forthcoming b.

5. Winston 1982 and Pateman 1982 develop similar accounts on this point, whereas Moore and Carling 1982 see Chomsky's philosophical inspiratic coming much more from Carnap. There is probably an historical development along the lines proposed by Steinberg 1975.

6. Roughly, the Wittgensteinian private language argument for the necessarily public character of rule-normativity goes like this:

   (i) If something is a word, then its application is governed by a rule;

(iii) The distinction between following a rule and thinking one is when one isn't can only be drawn if it is possible for rule-violation to be found out or corrected;

(iv) People cannot detect or correct their own errors except on the basis of public ('outward') criteria;

(v) Public or outward criteria are not private criteria. Hence, if something is a word it cannot be part of a private language: other people must be able to understand it.

7. Kripke presents a 'liberalised' version of the private language argument in footnote 83 (p.102f) which might be used to get round these objections. Itkonen uses a similar idea which he calls 'reduced social control' (Itkonen 1978, around pp.151-54) to meet similar difficulties. I shan't discuss these moves here; in section V of Pateman 1983 I discuss Itkonen's position; Itkonen replies in Itkonen forthcoming.

8. It is unfortunate that Stich uses the word 'Representation' to characterise one sub-class of cognitive theories. Both RTM and STM theories are, in an important sense, representational; an RTM might be better characterised as a semantic theory of the mind. There is further discussion of the issues at stake in Fodor 1982 and Burge 1982 I located this discussion between Fodor and Burge too late to take account of it here.

9. There is a type correlation between two domains when for any tokens of some one type (say A) at one level there will be a token of some one

that for every mental token there will be some brain state, but makes no claims about the typing of these states.

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