In sum, social neuroscience is an interdisciplinary field that is helping to illuminate questions ranging from the social sciences to the neurosciences by examining how organismic processes are shaped, modulated, and modified by social factors and vice versa.

See also: Behavioral Neuroscience; Comparative Neuroscience; Psychophysiology

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<div align="right">J. T. Cacioppo and G. G. Bernston</div>

Social Properties (Facts and Entities): Philosophical Aspects

One area of philosophical concern, dating from the very beginning of philosophy itself, is ontology: what is there?; or, what kinds of things are there? Many questions about existence are straightforwardly em-

pirical, and hence of no interest to the ontologist. Are there unicorns, wombats, planets circling stars other than our Sun? But other existence questions are not empirical, and these are the province of the ontologist. Are there any physical objects, ideas, forms, numbers, sets, propositions, minds, concepts, a Deity, social wholes? To answer these questions is to engage in producing a list of the metaphysical kinds of things that one believes exist.

'Existence' in what sense? Some philosophers have held that each metaphysically different kind of thing exists in its own, special sense of 'existence'; or they may distinguish between being, existence, subsistence, and so on.

A more plausible view is that 'existence' is univocal, that whatever exists exists in the same sense, and that differences in the 'mode' of existence, say, of mind and body, arise not because *existence* differs in the two cases but because of the differences between minds and bodies themselves. Bodies have a spatial 'mode' of existence, it might be thought, and minds do not, but, if so, that is because of the differences between them, not because they exist in different senses of that word. Besides, if existence had a special sense for each metaphysical kind of thing, ontology could become somewhat trivial. To the question of whether, say, propositions really exist, it would be anodyne simply to say that they do exist, but only in the special proposition-sense of existence. Or that minds exist, but only in the special mental sense of existence. Or that possibilia subsist rather than exist (since that is what possible things do) whereas actual things exist rather than subsist. Ontology would entail no honest labor, and therefore no real rewards.

1. Ontological Commitments and How to Wriggle Out of Them

When we speak, indeed even whenever we simply think, we typically take ourselves to be speaking or thinking about various things. It is not easy to capture this notion of aboutness, but here I rely on the readers' intuitive grasp of the idea.

I do not always think or speak about anything, whenever I speak or think: in (a) 'whoever is a bachelor is neurotic,' I am not trying to speak or think about any particular thing, or even about any set of things. In (a), I am merely linking up two properties: the property of being a bachelor and the property of being neurotic, but I am not speaking about those properties. If I want to speak about the set of bachelors and the set of neurotic persons, I could say: (b) 'The set of bachelors is a proper subset of the set of neurotic persons.' (b) is certainly not equivalent to (a), since (b) has ontological commitments of which (a) is wholly innocent.

I might be thinking or speaking about Socrates or the man I met yesterday or the tallest building in New York. Let us call whatever I think or speak about 'entities.' There are a number of ways in which things can go wrong when I speak about entities. First, I can make mistakes, e.g., when I take myself to be thinking about something that does not in fact exist: Atlantis, Vulcan, witches, or phlogiston. These are cases in which we really are *intending* to think about something, but fail. Let us call these sorts of cases, 'cases of elimination.' There simply are no such things, and if we have at first placed them on our list of what there is, on finding that they do not exist, we remove or eliminate them from the list. Some philosophers have said this about minds, or mental states. In cases of elimination, nothing can be salvaged from talk about such things as it stands. Such talk is plain false (see Lycan and Pappas 1972).

Second, there are cases which, on first appearance, seem to be ones in which I am speaking or thinking about something, but closer inspection dispels the appearance. Not all cases of apparently thinking about something turn out, on analysis, really to be such. I may not be really intending to talk about the thing in question at all. I may, for example, talk about the average family, but such talk or thought is not really about what it might seem to be about. There is no such thing as *the* average family about which I am talking.

Average-family talk or thought is merely shorthand for talking about the number of people in the country divided by the number of households (or something like this anyway). There is no such thing as the average family, nothing that should be taken ontologically seriously, beyond taking seriously households and people.

Let us call these cases, 'cases of replacement.' The original talk, r_1 ('the average family') has apparent ontological commitments of some sort. The replacing talk, r_2 ('households' and 'persons') does not have those same apparent ontological commitments (although of course it has some of its own). The burden of proof, in such cases, falls on the person wishing to show that some of the ontological commitments of the original talk are apparent but not real. He or she must indicate the replacing talk that lacks them. In these cases, our original talk gets salvaged, because it is true, if the replacing sentence without the same apparent ontological commitments is true.

What must be the case for the replacing talk, r_2, to count as an adequate replacement for the original talk, r_1? The two talks, r_1 and r_2, must convey the same information, and part of that requirement is that r_1 if and only if r_2. No two sentences can convey the same information unless they at least have the same truth values. Beyond this, matters get controversial, but the same-truth-value condition will suffice for our purposes.

It is not required that the replacement can actually be carried out in practice. Actually replacing r_1 by r_2 might be cumbersome, complicated, long-winded, or whatever. The replacement must be theoretically

possible, and the supporter of the replacement needs to show how the replacement is possible in principle, but not necessarily in practice.

Third, and closely related to the above, are cases in which our talk or thought really and not just apparently is about some entities, but they turn out *not* to be *sui generis*, since they can be reductively identified as or with another thing. These are, appropriately, cases of reductive identification.

This is the reductive identification which claims so much of philosophers' energies. There are, it may be said, physical objects, but they are really only sets of sense data; there are mental states, but they are identical with brain states; there are numbers but they are merely the same as sets of sets. Such attempts at reductive identification allow the philosophical cake to be both had and eaten. Along with common sense, it can be asserted that there are such things. But, along with some ideal of philosophical acceptability, they can be shown to be reductively identified as merely another thing after all.

Insofar as philosophical reductive identification succeeds, it allows us to shorten our ontological list, while not denying the claims of common sense. It is for this reason that the term 'reductive' is appropriate; these identifications permit a reduction in the number of basic ontological commitments. On a materialist reductive analysis, for example, there are minds, but they do not have to be taken ontologically seriously, beyond taking bodily or brain states or whatever seriously. Or, according to Berkeleyian idealism, there are tables, chairs, and so on, but they are only ideas in the mind. Once ideas in the mind are on the ontological list, adding tables and chairs would be superfluous. Tables and chairs are already on the list, if ideas in the mind are.

Again, in cases of reductive identification, our talk gets salvaged, since the original talk is true if the analysis containing the reductive identifier is (see *Reduction, Varieties of*).

2. Entities, Properties, Facts

Socrates or the man I met yesterday or the tallest building in New York are concrete objects. Sets and numbers and propositions, if there are such, are abstract objects, which are neither spatial nor temporal. Other things we think or speak about include spatio-temporal nonconcreta: events and actions, such as the eruption of Mount Vesuvius and the first running of a mile under 4 min; processes such as the erosion of the soil in some specific place over a specific period; and states such as the lake's remaining calm on such-and-such a night or the stillness of the air on a summer's eve or the presence of helium in a balloon.

Thinking or talking about any sort of thing is caught by reference; we refer to something, namely, to that entity our thought or language is about. This entry confines itself to discussion of facts, entities, and properties, as such referents of our thought, but no discussion of social ontology could be complete unless it brought to the fore actions, and in particular social actions (see *Joint Action* and *Action, Collective*).

Typically, when I think about something, I also ascribe some feature or characteristic to it. For example, when I say of Socrates that he is snub-nosed, or of the man I met yesterday that he is a spy, or of the erosion of the soil that it was accidental, I ascribe such a feature or characteristic. Let us call these features or characteristics 'properties.' The duality of reference and ascription is captured grammatically by the distinction between subject and predicate, and metaphysically by the distinction between entity and property. (All of this needs serious qualification, and extension to other sorts of sentences, but I forego that pleasure here.)

Are there, ontologically speaking, properties as well as entities? There are at least two ways in which to handle this question. First, there is the austere point of view that says that ascribing properties is not enough to be ontologically committed to them. There are properties, only if we *talk or think about* them, *refer to* them, and if such talk or thought cannot be eliminated or replaced by other talk or thought which makes no such ontological commitment (see Quine 1963).

There are, though, cases in which we do appear to refer to properties: (a) 'The color crimson is a shade of the color red.' It is easy to show that (b) 'The set of crimson things is a subset of the set of red things' will not do as a replacement for (a). And if no such replacement or elimination is possible, then there are properties, although they may not be *sui generis*, if any reductive identification of them is possible.

Second, there is the more relaxed approach, which says that we are ontologically committed to properties if they are actually instantiated (or perhaps even if only well defined), whether or not we refer to them or talk about them. Ascription alone, without reference, may still involve us in ontological commitment. If so, 'this visual patch is red,' which ascribes the property of being red to something, but does not refer to the property, commits us to the property of being red as well as to a visual patch, since the sentence insures that redness has at least one actual instance.

Finally, and much more controversially, some philosophers have believed that our account of what there is must include not only entities and properties, but also facts, for example the fact that some entity *e* has some property *P*. Facts have been enlisted for many purposes, one such being a correspondence theory of truth, and another being causal analysis. Are sentences true when they correspond to the facts? Is it the fact that the match was struck that caused it to light? These two particular uses of facts have come in for some devastating criticism. But even so, there may well be facts, even if they are useless in theories of truth and for analyses of causality.

If it is a fact that Socrates is snub-nosed, then is not there at least that fact? At least on first appearance, it seems that there are facts. If so, there are not only Socrates and the property of being snub-nosed, but also Socrates' being snub-nosed (a state) and the fact that he is snub-nosed. If there are facts, then they count as a kind of entity, if they can be referred to and occupy subject position in sentences. 'The fact that Fiorello LaGuardia was elected disturbed many of his opponents,' was no doubt true, so we do seem to refer to facts. Without mere replacement, or elimination, or reductive identification, we have facts on our ontological list, as well as entities and properties, states, and events.

Needless to say, philosophers have disputed whether all of these 'reifications' are really required, and whether some can be understood in terms of the others. Perhaps numbers are just sets. Perhaps propositions are just sets of similar sentences. Perhaps minds are just brains. Perhaps there is the fact that Socrates is snub-nosed, or perhaps there is no such thing. And even if there is this fact, maybe it is identical with the state, Socrates' being snub-nosed. But none of that need be decided here.

3. Some Social Ontology

Thought and discourse about society, whether lay or by the social scientist, raises these ontological questions too. Just as I can think about Socrates or the tallest building in New York, so too I can think about France or the Icelandic working class or the commodity market or the National Football League. Our very thought about society appears to commit us to believing in nation states, governments, classes, social structures, tribes, clubs, associations, and so on, just as our thought about Socrates and the tallest building in New York appears to commit us to believing in persons and buildings. And we are really committed to these social entities, unless we can show that these turn out to be cases in which either we can, without loss, eliminate discourse about social entities entirely, or we can replace such talk with other talk that makes no similar ontological commitment, or there is some reductive identification available for the putative social entities.

What does 'social' connote? The basic application of the term relates to properties (for more about social properties, see below). What makes a property a social property? This is, I think, a difficult question. Some entity's having a property may have a social cause or social effect, without making the property itself social. For example, the soil's being eroded may be caused by inept bureaucracy, and may result in a stock market plunge, but none of that makes the property of being eroded a social property. Whether a property is social depends on something intrinsic about the property itself, and not on the causes or effects of its being instantiated.

A property is social (roughly, without some refinements unnecessary here) if and only if from the fact that it is instantiated, it follows that at least two people exist and have an interlocking system of beliefs and expectations about one another's thoughts or actions. Intuitively, I think this gets our idea of sociality about right, although one might just think that the requisite number should be greater than two. For example, the property of jointly carrying something is not social on this account, and rightly so, because two men might jointly carry something without either being aware of what the other was doing, oblivious to each other's very existence. Jointly carrying requires two people, but makes no demands on their beliefs and expectations about one another. Purchasing a stone is, on the other hand, a social property on this account, and rightly so. No two people could be engaged in such a transaction without having a whole host of beliefs and expectations about the actions of the other.

Social entities, if such there be, are entities such that they have at least one social property essentially. France, for example, is essentially a nation; the Icelandic working class is essentially a class, a working class, and Icelandic. Once the idea of a social property is to hand, we can use it to introduce the idea of sociality as applied to other ontological categories. So our idea of the social fans outwards, as it were, from our idea of a social property.

Social entities, if such there be, are never concrete, in the way in which earlier examples of entities were. Concrete entities, like Socrates and the tallest building in New York, are exclusive space occupiers, no two of which can occupy the same space at the same time.

Social entities do, in general, appear to be space occupiers; France occupies a certain region of physical space, the Icelandic working class is physically in Iceland. But social entities are not exclusive space occupiers. Suppose a diocese of the Catholic Church, call it 'Sancta Gallia,' occupies exactly the same geographical area as does France. If so, two distinct social entities, France and Sancta Gallia, occupy the same physical space at the same time.

What, then, of the three options we have available, for dealing with these apparent ontological commitments of our social discourse? Elimination of discourse about social entities would seem to involve an intellectual loss; we could not even in principle say things we would want to say without the discourse. (Imagine where we would be without sociology, anthropology, and a part of economics, for example.) The issue here is not just one of linguistic economy. It is not that we could not nearly as easily say what we want without social discourse but could only do so in an altogether more baroque fashion; rather, the claim is that we would have no way in principle of conveying what we want to say without that social discourse.

On the other hand, replacement does seem possible for some very simple examples. A case which has been mentioned in the literature is 'The Jewish race is cohesive,' which appears to commit the speaker or thinker to an entity, the Jewish race. But, it is alleged, this is replaceable by 'Jews tend to marry other Jews,' etc., and the latter makes no such ontological commitment to the existence of a race. 'The Jewish race is cohesive' behaves very much like 'The average family has 3.2 members.' (See J. W. N. Watkins, 'Ideal Types and Historical Explanation' and 'Historical Explanation in the Social Sciences,' the first of which is reprinted in Ryan (1973), and both of which are reprinted in O'Neill (1973).)

I do not wish to claim that these replacements are never available; perhaps they do work for the case just mentioned. But it seems hard to see what replacement strategy would work for many other examples. Consider 'France is a charter member of the United Nations.' What sentence or sentences could replace this, yet convey the same information, at least in the sense of having the same truth value, and yet make no ontic commitments to a nation state and a world organization? I can here only invite the reader to suggest candidates; I myself know of none. Replacement does not work as a general strategy.

However, it is one thing to admit that there are such entities as France, the United Nations, and the Icelandic working class, but quite another to insist that they cannot be reductively identified with something more respectable. Many philosophers are drawn to reductive strategies of one kind or another: there are mental states, but they are (merely) identical with brain states; there are numbers, but they are (merely) identical with sets of sets; there are physical objects, but they are (merely) identical with sets of sense data.

So too various reductive strategies suggest themselves for social entities: France is (merely) a geographical area, a set of persons, etc. No one can 'prove' that no reductive strategy could work. What must be done, I think, is to evaluate each reductive strategy that suggests itself, one-by-one.

There are some general lessons one can draw, though. The vague thought, 'Nations are identical with the people who make them up,' is ill-formed. In any reductive identification, names must flank both sides of the identity sign. So, for instance, 'France = ···.' Well, identical with what? Name fillers for the space on the right-hand side of the identity sign will either be extensional or nonextensional entities, in the following sense. Sets and aggregates and land masses are extensional, since, if and only if a and b are sets or aggregates or land masses, $a = b$ if and only if a and b have exactly the same members, or components, or parts.

But no extensional entity in this sense could be identical with France, for example, since their identity conditions will differ. France can remain numerically one and the same, in spite of variation in its citizenry

or residents, or land occupancy. Even if one considered the set of all actual citizens of France or pieces of land that France ever occupied at any time, past, present, and future, there would be counterfactual differences.

France could have occupied a different piece of land than it did, or had different citizens or residents than it did, but this could not be true of the set or aggregate of its citizens, residents, or lands. France is nonextensional; sets, aggregates, and land masses are extensional, and no nonextensional entity could be identical with an extensional one. (In fact, this little argument which relies on counterfactual differences assumes that 'France' and 'the set of ···.' both rigidly designate, since the identity required is identity across all possible worlds. But I would argue that this assumption is true.)

If France is a nonextensional entity and no nonextensional entity can be identical with an extensional one, then what about some nonextensional entity for the reductive identification of France? Examples that come to mind are things like groups. Is France to be identified with the *group* of French people? The problem with this suggestion is that a group seems itself to be a social entity, and hence hardly a candidate for the reductive identification of France with a nonsocial entity. What the determined reductivist needs to find is a nonextensional entity which is also nonsocial, for the reductive identification of France, and I am aware of no such obvious candidate.

So much for social entities. What sort of properties get ascribed to things when we think or talk socially? We can think or speak of either social entities or nonsocial ones like Socrates or the tallest building in New York and, in either case, ascribe social properties to them: 'France is a charter member of the United Nations' ascribes to a pair of social entities, France and the United Nations, the relational social property of being a charter member of; 'Socrates was mayor of Athens' ascribes (falsely, as it happens) to a nonsocial entity, Socrates, the relational social property of being a mayor of.

From the fact that social properties figure in our discourse, it does not yet follow that we refer to or think about social properties. The relational social property, being the mayor of, certainly figures in 'Fiorello LaGuardia was mayor of New York,' but the sentence is not *about* that social property. It is only about Fiorello LaGuardia and New York.

On the relaxed criterion, the sentence commits us to the existence of three things: a person, a city, and the social property of being a mayor of. On the austere criterion, since the sentence is only about Fiorello LaGuardia and New York, the sentence commits us only to the existence of a person and a city, but not to the existence of a social property.

But even were we to adopt the austere view, there are a host of arguments, modeled on ones about properties generally, which do move us to talking about social properties, and so to the existence of

social properties. Here are terse statements of two such arguments: (a) If Iceland is capitalist, and if France is capitalist, then there is some property that Iceland and France share; (b) If France is a charter member of the United Nations, then it follows that France is a member of the United Nations. The inference in (b) requires taking properties ontologically seriously.The first argument parallels one by Hilary Putnam (1980) on properties generally; the second parallels one by Donald Davidson (1980) on action.

So we talk and think about social properties, and I do not see how we could simply eliminate, do without, such discourse. Nor do I know of any discourse which could replace discourse about social properties, and which both lacked the ontological commitment to social properties but allowed us to convey the same information or messages. So, on the austere view, there seem to be social properties, as well as nonsocial ones. *A fortiori*, on the relaxed view, we get properties, social and nonsocial, just insofar as we ascribe them to actually existent things, or just in case they are well defined.

Could each social property be reductively identified either with some specific nonsocial property, or with some finite Boolean construction of such? I doubt whether this could be so. Let me give an indication of why I think this. Some social properties are both nonvariable and weak, in the following senses. A social property *P* is nonvariable if and only if *P* is instantiated, then some specific set *s* of interlocking beliefs and expectations exists. For example, the property of participating in the custom of drinking tea at breakfast is nonvariable, since the beliefs and expectations associated with it must be the set of beliefs and expectations about drinking tea at breakfast. A social property *P* is weak if and only if *P* is instantiated, then the interlocking beliefs and expectations are about types of events which are not themselves social. The social property of participating in the custom of drinking tea at breakfast is also weak, since the beliefs and expectations associated with it concern drinking tea at breakfast, which is itself a nonsocial event or activity.

But the most characteristic sorts of social property are neither nonvariable nor weak; they are variable and strong. Consider the property of being a mayor. If that property is instantiated, it is true that some set of interlocking beliefs and expectations must exist, but there is no one particular set that must exist. There is an indefinitely wide range of things that a mayor might be expected to do in various different societies or social settings. So the property is variable, in the sense of being indefinitely variably instantiable. Moreover the property is strong, since what a mayor is expected to do involves events and activities like receiving the ceremonial key to the city, opening formal events, representing the city at certain social or political functions, and so on, and these things are themselves social events or activities.

It seems to me that these two features of typically social properties make the reductive identification of social properties with nonsocial ones exceedingly implausible. One might have thought that a social property could be reductively identified with the nested and interlocking set of beliefs and expectations with which it is associated. But since there is an indefinitely long list of such sets associated with each typically social property, and these beliefs and expectations themselves require the existence of *social* events or activities, the reductive identification appears to fail.

I do not have the space here to discuss the issue at length of whether it is necessary to admit facts to our ontology. Frequently, the case for or against reduction of social science to physical science has been put in terms of facts; supervenience claims in social science typically enlist social and nonsocial facts as the terms of the debate. (See Maurice Mandelbaum, 'Societal facts,' reprinted in Ryan (1973) and O'Neill (1973).)

But what does seem plain is that *if* there are facts, then, in the light of what we have already said above about social properties and social entities, there must be social facts. A fact would qualify as social if either it was a fact about a social entity, or it was a fact about any kind of entity, social or nonsocial, and attributed a social property to that entity. So the fact that the United Nations contributed to relief in Kosovo is a social fact, since it is about a social entity, and the fact that LaGuardia was mayor of New York is a social fact, since it attributes a social property to a nonsocial entity, namely to a person.

Often, the positions described in the relevant literature about social ontology are posed in terms of individualism and holism, sometimes with the qualifying adjective, 'methodological' added (see *Methodological Individualism: Philosophical Aspects*). Sometimes, the positions are expressed in terms of facts, and at other times, in terms of entities. Supervenience claims for the social ('the social supervenes on the nonsocial') are sometimes posed in terms of facts, at other times in terms of properties. It might be claimed that there are no irreducible social facts, or that there are no irreducible social entities or that there are no irreducible social properties. As can be seen from the discussion above, the positions are not equivalent. For example, as I have claimed, some social facts ascribe social properties to nonsocial entities.

Rarely, if at all, is the distinction drawn between the existence of entities, properties, and facts. Does individualism in the social sciences eschew social entities but admit irreducible social properties? Or should it eschew both? What should it say about facts? Might there be distinct versions of individualism, so that it comes in stronger and weaker forms?

The lesson is that these terms, 'holism' and 'individualism,' do not name unambiguous positions unless and until various distinctions are drawn, and the ontological claims of each position are clearly

specified. (See S. Lukes, 'Methodological Individualism Reconsidered,' reprinted in Ryan (1973).)

See also: Atomism and Holism: Philosophical Aspects; Causation: Physical, Mental, and Social; Causes and Laws: Philosophical Aspects; Identity and Identification: Philosophical Aspects; Individualism versus Collectivism: Philosophical Aspects; Shared Belief

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Social Protests, History of

Social protests have been integral to collective life since the first complex communities were formed. One of the oldest references to protest was found on an inscription in a tomb in Egypt's Valley of the Kings from the reign (1198–66 BC) of Rameses III in the New Kingdom translated as follows: 'Today the gang of workmen have passed by the walls of the royal tomb saying: we are hungry, eighteen days have gone by, and they sat down behind the funerary temple of Tuthmosis III … the workmen remained in the same place all day' (Romer 1982, pp. 193–5).

Social protest is defined here as contentious action undertaken collectively in response to perceived injustice or unfair action on the part of those who hold legitimate political and economic power. It seeks to achieve social (as opposed to political and economic) ends, or alternatively to restore or return to earlier ways of life. Examples of such aims are a more equitable distribution of privilege or wealth, reducing inequality among persons or groups, changing or restoring religious beliefs and/or cultural practices, and reversing cultural change. This article examines social protest in Western and non-Western societies starting in Antiquity and through the nineteenth century.

1. Protest in Imperial Rome

The authoritarian regime of Imperial Rome did not offer many opportunities for peaceful communication of ordinary people's grievances or wishes; despite the city's heavy policing, however, the large agglomerations of people in the Colosseum, Circus, and theaters offered the possibility of mass (and more or less anonymous) expressions of popular opinion. In these settings, crowds could shout demands in the Emperor's presence for the disciplining of a hated official, or object to an unpopular war. The streets too were a locus for popular protest, especially that about the shortage or high price of grain. Street disorder of this type contributed to the fall of Nero. Crowds of ordinary citizens might also call for the downfall of a usurper of the Imperial throne or express their dissatisfaction with a prefect or his policy.

The grain riot or angry complaints about the high price of bread continued to be a feature of popular protest in many parts of the world, right into the twentieth century. Most medieval and early modern European states sought to regulate the grain trade and concomitantly the price of bread at retail. These controls began to be modified and eventually removed as trade was liberalized in Western Europe, and newly formulated laissez-faire theories were put into effect in the late seventeenth century. The result was an upsurge of two types of protest: (a) crowd blockage of grain being moved on roads or waterways out of a growing region with a surplus to one with a shortage, or a city (especially an administrative city or the capital) with a stronger claim on adequate supplies; and (b) the market riot with confiscation of grain, its sale by the

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