= Jerry Fodor =

Jerry Alan Fodor (/ ?fo?d?r / ; born 1935) is an American philosopher and cognitive scientist . He holds the position of State of New Jersey Professor of Philosophy , Emeritus , at Rutgers University and is the author of many works in the fields of philosophy of mind and cognitive science , in which he has laid the groundwork for the modularity of mind and the language of thought hypotheses , among other ideas . He is known for his provocative and sometimes polemical style of argumentation and as " one of the principal philosophers of mind of the late twentieth and early twenty @-@ first century . In addition to having exerted an enormous influence on virtually every portion of the philosophy of mind literature since 1960 , Fodor ? s work has had a significant impact on the development of the cognitive sciences . "

Fodor argues that mental states , such as beliefs and desires , are relations between individuals and mental representations . He maintains that these representations can only be correctly explained in terms of a language of thought (LOT) in the mind . Furthermore , this language of thought itself is an actually existing thing that is codified in the brain and not just a useful explanatory tool . Fodor adheres to a species of functionalism , maintaining that thinking and other mental processes consist primarily of computations operating on the syntax of the representations that make up the language of thought .

For Fodor , significant parts of the mind , such as perceptual and linguistic processes , are structured in terms of modules , or " organs " , which he defines by their causal and functional roles . These modules are relatively independent of each other and of the " central processing " part of the mind , which has a more global and less " domain specific " character . Fodor suggests that the character of these modules permits the possibility of causal relations with external objects . This , in turn , makes it possible for mental states to have contents that are about things in the world . The central processing part , on the other hand , takes care of the logical relations between the various contents and inputs and outputs .

Although Fodor originally rejected the idea that mental states must have a causal , externally determined aspect , he has in recent years devoted much of his writing and study to the philosophy of language because of this problem of the meaning and reference of mental contents . His contributions in this area include the so @-@ called asymmetric causal theory of reference and his many arguments against semantic holism . Fodor strongly opposes reductive accounts of the mind . He argues that mental states are multiply realizable and that there is a hierarchy of explanatory levels in science such that the generalizations and laws of a higher @-@ level theory of psychology or linguistics , for example , cannot be captured by the low @-@ level explanations of the behavior of neurons and synapses . He has also emerged as a prominent critic of what he characterizes as the ill @-@ grounded Darwinian and neo @-@ Darwinian theory of natural selection .

= = Biography = =

Jerry Fodor was born in New York City in 1935 , of Jewish descent . He received his A.B. degree (summa cum laude) from Columbia University in 1956 , where he studied with Sydney Morgenbesser , and a PhD in Philosophy from Princeton University in 1960 , under the direction of Hilary Putnam . From 1959 to 1986 Fodor was on the faculty of the Massachusetts Institute of Technology in Cambridge , Massachusetts . From 1986 to 1988 he was a full professor at the City University of New York (CUNY) . Since 1988 he has been State of New Jersey Professor of Philosophy and Cognitive Science at Rutgers University in New Jersey . Besides his interest in philosophy , Fodor passionately follows opera and regularly writes popular columns for the London Review of Books on that and other topics .

Philosopher Colin McGinn , who taught with Fodor at Rutgers , described him in these words :

" Fodor (who is now a close friend) is a gentle man inside a burly body , and prone to an even burlier style of arguing . He is shy and voluble at the same time ... a formidable polemicist burdened with a sensitive soul .... Disagreeing with Jerry on a philosophical issue , especially one dear to his heart can be a chastening experience .... His quickness of mind , inventiveness , and sharp wit are

not to be tangled with before your first cup of coffee in the morning . Adding Jerry Fodor to the faculty at Rutgers [University] instantly put it on the map , Fodor being by common consent the leading philosopher of mind in the world today . I had met him in England in the seventies and ... found him to be the genuine article , intellectually speaking (though we do not always see eye to eye) . "

Fodor is a member of the American Academy of Arts and Sciences . He has received numerous awards and honors : New York State Regent 's Fellowship , Woodrow Wilson Fellowship (Princeton University) , Chancellor Greene Fellow (Princeton University) , Fulbright Fellowship (Oxford University) , Fellow at the Center for Advanced Study in the Behavioral Sciences , and a Guggenheim Fellowship . He won the first Jean Nicod Prize for philosophy of mind and cognitive philosophy in 1993 . His lecture series for the Prize , later published as a book by MIT Press in 1995 , was titled The Elm and the Expert : Mentalese and Its Semantics . In 1996 ? 1997 , Fodor delivered the prestigious John Locke Lectures at the University of Oxford , titled Concepts : Where Cognitive Science Went Wrong , which went on to become his 1998 Oxford University Press book of the same name . He has also delivered the Patrick Romanell Lecture on Philosophical Naturalism (2004) and the Royce Lecture on Philosophy of Mind (2002) to the American Philosophical Association , of whose Eastern Division he has served as Vice President (2004 ? 2005) and President (2005 ? 2006) . In 2005 , he won the Mind & Brain Prize .

He lives in New York with his wife , the linguist Janet Dean Fodor , and has two grown children .

= = Fodor and the nature of mental states = =

In his article " Propositional Attitudes " (1978) , Fodor introduced the idea that mental states are relations between individuals and mental representations . Despite the changes in many of his positions over the years , the idea that intentional attitudes are relational has remained unchanged from its original formulation up to the present time .

In that article , he attempted to show how mental representations , specifically sentences in the language of thought , are necessary to explain this relational nature of mental states . Fodor considers two alternative hypotheses . The first completely denies the relational character of mental states and the second considers mental states as two @-@ place relations . The latter position can be further subdivided into the Carnapian view that such relations are between individuals and sentences of natural languages and the Fregean view that they are between individuals and the propositions expressed by such sentences . Fodor 's own position , instead , is that to properly account for the nature of intentional attitudes , it is necessary to employ a three @-@ place relation between individuals , representations and propositional contents .

Considering mental states as three @-@ place relations in this way , representative realism makes it possible to hold together all of the elements necessary to the solution of this problem . Further , mental representations are not only the objects of beliefs and desires , but are also the domain over which mental processes operate . They can be considered the ideal link between the syntactic notion of mental content and the computational notion of functional architecture . These notions are , according to Fodor , our best explanation of mental processes .

= = The functional architecture of the mind = =

Following in the path paved by linguist Noam Chomsky , Fodor developed a strong commitment to the idea of psychological nativism . Nativism postulates the innateness of many cognitive functions and concepts . For Fodor , this position emerges naturally out of his criticism of behaviourism and associationism . These criticisms also led him to the formulation of his hypothesis of the modularity of the mind .

Historically , questions about mental architecture have been divided into two contrasting theories about the nature of the faculties . The first can be described as a " horizontal " view because it sees mental processes as interactions between faculties which are not domain specific . For example , a judgment remains a judgment whether it is judgment about a perceptual experience or a judgment

about the understanding of language . The second can be described as a " vertical " view because it claims that our mental faculties are domain specific , genetically determined , associated with distinct neurological structures , and so on .

The vertical vision can be traced back to the 19th century movement called phrenology and its founder Franz Joseph Gall . Gall claimed that mental faculties could be associated with specific physical areas of the brain . Hence , someone 's level of intelligence , for example , could be literally " read off " from the size of a particular bump on his posterior parietal lobe . This simplistic view of modularity has been disproved over the course of the last century .

Fodor revived the idea of modularity , without the notion of precise physical localizability , in the 1980s , and became one of the most vocal proponents of it with the 1983 publication of his monograph Modularity of Mind . Two properties of modularity in particular , informational encapsulation and domain specificity , make it possible to tie together questions of functional architecture with those of mental content . The ability to elaborate information independently from the background beliefs of individuals that these two properties allow Fodor to give an atomistic and causal account of the notion of mental content . The main idea , in other words , is that the properties of the contents of mental states can depend , rather than exclusively on the internal relations of the system of which they are a part , also on their causal relations with the external world .

Fodor 's notions of mental modularity , informational encapsulation and domain specificity have been taken up and expanded , much to Fodor 's chagrin , by cognitive scientists such as Zenon Pylyshyn and evolutionary psychologists such as Steven Pinker and Henry Plotkin , among many others . But Fodor complains that Pinker , Plotkin and other members of what he sarcastically calls " the New Synthesis " have taken modularity and similar ideas way too far . He insists that the mind is not " massively modular " and that , contrary to what these researchers would have us believe , the mind is still a very long way from having been explained by the computational , or any other , model .

= = Intentional realism = =

In A Theory of Content and Other Essays (1990) , Fodor takes up another of his central notions : the question of the reality of mental representations . Fodor needs to justify representational realism to justify the idea that the contents of mental states are expressed in symbolic structures such as those of the LOT .

= = = Fodor 's criticism of Dennett = = =

Fodor starts with some criticisms of so @-@ called standard realism . This view is characterized , according to Fodor , by two distinct assertions . One of these regards the internal structure of mental states and asserts that such states are non @-@ relational . The other concerns the semantic theory of mental content and asserts that there is an isomorphism between the causal roles of such contents and the inferential web of beliefs . Among modern philosophers of mind , the majority view seems to be that the first of these two assertions is false , but that the second is true . Fodor departs from this view in accepting the truth of the first thesis but rejecting strongly the truth of the second .

In particular , Fodor criticizes the instrumentalism of Daniel Dennett . Dennett maintains that it is possible to be realist with regard to intentional states without having to commit oneself to the reality of mental representations . Now , according to Fodor , if one remains at this level of analysis , then there is no possibility of explaining why the intentional strategy works :

" There is ... a standard objection to instrumentalism ... : it is difficult to explain why the psychology of beliefs / desires works so well , if the psychology of beliefs / desires is , in fact , false .... As Putnam , Boyd and others have emphasized , from the predictive successes of a theory to the truth of that theory there is surely a presumed inference ; and this is even more likely when ... we are dealing with the only theory in play which is predictively crowned with success . It is not obvious ... why such a presumption should not militate in favour of a realist conception ... of the interpretations

of beliefs / desires . "

= = = Productivity , systematicity and thought = = =

Fodor also has positive arguments in favour of the reality of mental representations in terms of the LOT . He maintains that if language is the expression of thoughts and language is systematic , then thoughts must also be systematic . Fodor draws on the work of Noam Chomsky to both model his theory of the mind and to refute alternative architectures such as connectionism . Systematicity in natural languages was explained by Chomsky in terms of two more basic concepts : productivity and compositionality .

Productivity refers to a representational system 's unbounded ability to generate new representations from a given set of symbols . " John " , " loves " , and " Mary " allow for the construction of the sentences " John loves Mary " and " Mary loves John " . Fodor 's language of thought theorizes that representations are decomposable into constituent parts , and these decomposed representations are built into new strings .

More important than productivity is systematicity since it does not rely on questionable idealizations about human cognition . The argument states that a cognizer is able to understand some sentence in virtue of understanding another . For example , no one who understands " John loves Mary " is unable to understand " Mary loves John " , and no one who understands " P and Q " is unable to understand " P " . Systematicity itself is rarely challenged as a property of natural languages and logics , but some challenge that thought is systematic in the same way languages are . Still others from the connectionist tradition have tried to build non @-@ classical networks that can account for the apparent systematicity of language .

The fact that systematicity and productivity depend on the compositional structure of language means that language has a combinatorial semantics . If thought also has such a combinatorial semantics , then there must be a language of thought .

The second argument that Fodor provides in favour of representational realism involves the processes of thought . This argument touches on the relation between the representational theory of mind and models of its architecture . If the sentences of Mentalese require unique processes of elaboration then they require a computational mechanism of a certain type . The syntactic notion of mental representations goes hand in hand with the idea that mental processes are calculations which act only on the form of the symbols which they elaborate . And this is the computational theory of the mind . Consequently , the defence of a model of architecture based on classic artificial intelligence passes inevitably through a defence of the reality of mental representations .

For Fodor , this formal notion of thought processes also has the advantage of highlighting the parallels between the causal role of symbols and the contents which they express . In his view , syntax plays the role of mediation between the causal role of the symbols and their contents . The semantic relations between symbols can be " imitated " by their syntactic relations . The inferential relations which connect the contents of two symbols can be imitated by the formal syntax rules which regulate the derivation of one symbol from another .

= = The nature of content = =

From the beginning of the 1980s , Fodor adhered to a causal notion of mental content and of meaning . This idea of content contrasts sharply with the inferential role semantics to which he subscribed earlier in his career . As of 2010 Fodor criticizes inferential role semantics (IRS) because its commitment to an extreme form of holism excludes the possibility of a true naturalization of the mental . But naturalization must include an explanation of content in atomistic and causal terms .

= = = Anti @-@ holism = = =

Fodor has made many and varied criticisms of holism . He identifies the central problem with all the

different notions of holism as the idea that the determining factor in semantic evaluation is the notion of an " epistemic bond " . Briefly , P is an epistemic bond of Q if the meaning of P is considered by someone to be relevant for the determination of the meaning of Q. Meaning holism strongly depends on this notion . The identity of the content of a mental state , under holism , can only be determined by the totality of its epistemic bonds . And this makes the realism of mental states an impossibility :

" If people differ in an absolutely general way in their estimations of epistemic relevance , and if we follow the holism of meaning and individuate intentional states by way of the totality of their epistemic bonds , the consequence will be that two people (or , for that matter , two temporal sections of the same person) will never be in the same intentional state . Therefore , two people can never be subsumed under the same intentional generalizations . And , therefore , intentional generalization can never be successful . And , therefore again , there is no hope for an intentional psychology . "

= = = The asymmetric causal theory = = =

Having criticized the idea that semantic evaluation concerns only the internal relations between the units of a symbolic system , Fodor can adopt an externalist position with respect to mental content and meaning . For Fodor , in recent years , the problem of naturalization of the mental is tied to the possibility of giving " the sufficient conditions for which a piece of the world is relative to (expresses , represents , is true of) another piece " in non @-@ intentional and non @-@ semantic terms . If this goal is to be achieved within a representational theory of the mind , then the challenge is to devise a causal theory which can establish the interpretation of the primitive non @-@ logical symbols of the LOT . Fodor 's initial proposal is that what determines that the symbol for " water " in Mentalese expresses the property H2O is that the occurrences of that symbol are in certain causal relations with water . The intuitive version of this causal theory is what Fodor calls the " Crude Causal Theory . " According to this theory , the occurrences of symbols express the properties which are the causes of their occurrence . The term " horse " , for example , says of a horse that it is a horse . In order to do this , it is necessary and sufficient that certain properties of an occurrence of the symbol " horse " be in a law @-@ like relation with certain properties which determine that something is an occurrence of horse .

The main problem with this theory is that of erroneous representations . There are two unavoidable problems with the idea that " a symbol expresses a property if it is ... necessary that all and only the presences of such a property cause the occurrences . " The first is that not all horses cause occurrences of horse . The second is that not only horses cause occurrences of horse . Sometimes the A (horses) are caused by A (horses) , but at other times ? when , for example , because of the distance or conditions of low visibility , one has confused a cow for a horse ? the A (horses) are caused by B (cows) . In this case the symbol A doesn ? t express just the property A , but the disjunction of properties A or B. The crude causal theory is therefore incapable of distinguishing the case in which the content of a symbol is disjunctive from the case in which it isn ? t . This gives rise to what Fodor calls the " problem of disjunction " .