GAZZANIGA'S VIEW ON SELF: SOME OBSERVATIONS

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The Philosophical Dispute: SAG versus SAC

The philosophical approaches to self are diverse. However all these multifarious theories can be roughly brought under two broad heads: (i) The self as 'given' and (ii) The self as 'constructed'. The 'self as given' theories (hereafter to be referred to as SAG theory) are often real-self theories. Most of the traditional theorists have proposed their definition of real self based on this theory. This theory claims that the self is something that is given to us with its essential quality and other pre-characteristics. These theories insist individuals to discover such an entity, which is entirely different from the brain or any other part (or organ) of the biological body. Versions of this theory were pioneered by the Upanisadic seers of ancient India who believed that the ultimate purpose of life and existence is the realization and discovery of the self (Atman or Brahman). In the west the most prominent version of the theory of a given self is due to Descartes.

However last few decades witnessed the emergence of the latter theory namely self as 'constructed' theory (hereafter to be referred to as SAC theory)[1]. These theorists not only claim that there exists no such given entity corresponding to the traditional notion of self rather this whole concept is a natural creation of us human beings which has an evolutionary endorsement. According to some versions of this theory, our biological mechanism (brain cells) is responsible for producing in us a feeling of continuous inner self over and above the body. These theorists consent to the fact that it is both a matter of biological and psychological necessity that we try to find a common denominator for all our unified experiences, which we coin as 'self'. Proponents of this theory mostly conceive self in terms of a narrative, a concept imported into philosophy and cognitive science by Daniel Dennett. We find two divergent views on how this narrative self is constructed. Although both the views subscribe to the minimal contention that the narrative self is constructed, theorists from one camp call this self a

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[1] However we can interpret the notion of self propounded by the *Sunyavadins*, a Buddhist school of thought (main proponent Nagarjun) as a version of SAC thesis.

'rich amalgam of narratives', which is something more substantial, richer and which accounts for all sorts of contradiction, equivocation and self-deception. While the theorists from the other camp call this narrative self nothing more than an illusory or fictional entity.

Today progress in neuroscience reveals that all the mental processes (feelings, thoughts, memories etc) underlying our sense of self are scattered in the different zones of the brain (Antonio Damasio). Since these neurological processing is for most of the part distributed in various sections of the brain, there is no real simplicity of experience at one time, or real identity across the time that we could label as self. Although it is a well-agreed fact amongst present-day neuro-scientists that it is our brain activity which gives rise to our sense of self, however there is still no consensus amongst the researchers regarding the fact how exactly 'the six-layered cortical sheet gives rise to the sense of self'.[2] Cognitive scientists are still exploring how the neuron firings give rise to a coordinated goal-directed behaviour. However they are firmly convinced that there exists no self apart from the brain. Brain is the physical basis of all our thoughts, language, aspiration, sense of consciousness, moral beliefs etc. There has been a long debate both in ancient times and contemporary times as to how discrediting the reality of self would dissolve the long-standing philosophical problems especially related to the ontological status of self. However such a position brings with it a fresh baggage of challenges relating to personal identity, free will and moral responsibility of an individual's actions. More importantly reality of self would greatly tear apart the way we lead our life, our current belief environment. So the pressure to rehabilitate the self is no easy task.

Before entering into the arguments in favour of restoring the self, forwarded by the contemporary SAC theorists, some questions always come to my mind – what is it that we are seeking to rehabilitate? If suspending the self shatters our belief environment to such a large extent, will we really be ready to discard such a notion? All the contemporary SAC theories accept that there exists a human individual and nothing beyond this individual. This individual engages in thought, action and deliberation. His

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[2] Broks Paul. (2003) *Into the Silent Land: Travels in Neurpsychology. Atlantic Books*

arm rises because of the activity in the brain and impulses in the nerves and not because there is an inner self-directing person (homunculus) who does the deciding and acting. Since denying this self is a 'life-shattering denial', SAC theorists have left no stone unturned to show how this denial is well grounded and how to rebuild the life that the denial of this self has shattered.

Another common belief that the contemporary SAC theorists share is that they reject that thing which has no place in science at the outset. So whenever they talk about denial of reality of self, 'reality' is taken to mean scientific reality. What does this denial of self mean? It means denying a person over and above the organism with its brain and other scientifically describable properties. Now denial of this self is as Baron remarks 'at once both less and more radical than it first appears'. It is 'less radical' in the sense that denial of the concept of a person does not cease our feeling like individuals or stop us from identifying people by names. However discarding such a concept of person may seem 'more radical' in the sense that whenever we will hereafter try to reflect upon our actions, the way we reason for our particular actions, values etc, denial of self seems to have a catastrophic effect.

Another aspect that almost all the contemporary SAC theorists are concerned with is the distinction between the *feeling* (or as many philosophers like Dennett would call it fiction) that an individual is a self or that an individual possess a self over and above its organs and brain (brain-states) and the *fact* that an individual really possesses such a 'given' self. In this context the SAC theorists cite examples from various disciplines (and also from daily life) how we work successfully with concepts that really do not exist. However here it is cautioned again and again that though metaphysically or ontologically such a concept may not exist, yet the corresponding brain-states to those concepts do exist.

A contemporary SAC theorist would for instance explicate Keats' writing 'An ode to a Nightingale' in the following manner[3]: Keats heard a nightingale and his then present state of the brain (along with other factors like genetic preferences, his previous memory of a nightingale's song etc.) sent an impulse which traveled to the auditory

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[3] I have borrowed this example from Richard Baron.

nerve which triggered several other impulses which in turn brought about change in patterns in the brain and finally led him to his write an ode. Now from the perspective of science, an exemplar of Homo sapiens wrote an ode to a nightingale and not a person. Here the SAG theorists can object that an ode makes sense only when we presuppose a self (or may be a community of selves) who can appreciate poetry. However science would say an 'ode' is nothing but a few series of marks on paper which produce certain effects in the brains of a certain set of people. However it will be a misreading if the mission or intention of the SAC theorists is considered here to be simply reducing the human or folk concepts to scientific jargon. What is actually intended here is that we can give a complete description of such concepts in a purely scientific term referring to brain-states and so on. However such descriptions do not account for value laden-ness (like achievement, appreciation etc.).

Again a SAG theorist may raise an objection against a SAC theorist that even their sincere attempt to chart out a complete scientific description of our behaviour etc fails to account for the corresponding justification of our behaviour. For instance Keats' Ode is a product of beauty in the sense that reading it produces brain-states, which are associated with sensations of pleasure. We seem to praise Keats for his product. But science cannot perhaps answer questions like~ why we feel grateful to Keats for gifting us with a beautiful poem? What is the justification for doing so? The SAC theorist would respond to this problem of justification by saying that we are justified in responding to people's actions so as to maximize the frequency of occurrence and strength of brain-states (that corresponds to happiness) following the evolutionary theory. Thus we can come up with a scientific account of justification. However a SAG theorist would then say "….. if that were done, our concept of justification would be severely impoverished. It is of its essence that it rises above the facts, that it does not just follow them. We want justifications to do more than [just] recite the facts".

However the difficulty of justifying evaluations of our actions still remains. Even if one 'looks inside' the head of a person who saved one from falling down a cliff one will find neurons and impulses and neurons responding to impulses but have no grounds for evaluating his action as praiseworthy or blameworthy. To whatever degree of refinement of mechanism science arrives at, we can only see what happened and never understand the moral worth of actions. So interpreting our electrical impulses is not possible. Rather

the only way left is to take resort to the concept of self, a moral agent who can be held responsible for his actions; only then, there remains a scope for evaluation of our actions. Now the program of denial of self means blocking the way to recognize the moral agency in me. Thus this denial leads us with no ground for blaming or appraising our actions. So this denial is disastrous.

Now the whole issue of whether at all the self can be held responsible for his actions results from the debate between determinism and randomness. In the deterministic end, the organism is simply a part and parcel of the 'universal clockwork ticking away inevitably'. So in this scheme he has no choice, he merely acts what he has to do. On the other hand in the random model, the clockwork is not wholly predictable. Unfortunately we cannot still confer responsibility to the self in this model because when we do something, which is not in our control (there are some neurons randomly firing in our brains), we cannot be held responsible for that action. So we cannot find any basis for our attributions of responsibility (praising or blaming any of our actions).

Therefore when we are talking about a responsible self we are transcending the scientifically describable organism. Now at this juncture a question may arise in our mind why do the SAG theorists take such a move of transcending the scientifically describable organism? The motive behind taking such a step is betterment of our society. Appraising our actions stimulates further good acts, though these appraisals or sense of personal responsibility may not be real. Here some contemporary theorists like Daniel Dennett forward an evolutionary line of argument and say that perhaps nature found that brain states (neuron-firing) corresponding to sense of personal responsibility were more favorable to species' existence than those without that sense. However it still remains a debatable issue for even the specialist evolutionary biologists to explore how our sense of personal responsibility originated and how it is transmitted. While talking about personal responsibility it is worth mentioning that today all SAC theorist across the board acknowledge that the responsibility we attribute to the self is not absolute, it is influenced greatly by both socio-cultural factors and genetic factors. Though the classical trend in philosophy is to acknowledge a watertight distinction between the external influences and realm of personal choice. Today when we talk about the choice of the self it includes both the personal choices and biases (hard-wired) of the individual that have genetic bearing and also environmental moorings (what Dennett calls memetic effects).

Another important effect of possessing a self is that it makes us feel our life is precious. And because we feel our life is precious, we perform all sorts of actions to protect our lives (or even that of others). Now a member of SAG theory argues that if we consider ourselves as organisms and nothing more than that, then there is really nothing special to make our persistence good. It is only because we think ourselves to be more than just organisms, that we invest our lives with value. We consider specific individuals to be precious in themselves. That is to say even if all the qualities which makes him special or precious were listed and reproduced in another individual, our feeling would not be same towards the latter individual as it is towards the former one. There is really no rationale for our special preference for the former individual unless we assume there is a self, which we value simply because of its identity and not its qualities[4]**.** The SAC theorists on the other hand argue here that we do assign value to people and their lives but we are really not justified in doing so. Even if the justification issue is pursued the SAC theorists would say 'isn't survival an important part of any organism's life, whether that organism has a sense of self or not?'

So when we are doing scientific realism, there is little or no place for an objective self over and above the socio-biological organism. In fact the SAC theorists generally agree that not only denial of self is well grounded but also such a stance gets us out of many conceptual tangles, which has little prospect of their being resolved even in the long run. The individual, the organism is recognized by the contemporary science but the self is an unnecessary add-on. They have shown how dropping the concept of self dissolves many of the long-standing philosophical knots. Does this mean that concept of self does not play a vital role in the lives of the contemporary SAC theorists? It does play an important role in a SAC theorist's life so does it play in a SAG theorist's life, the difference being while the SAC theorist proposes to acknowledge the unreality of self at the same time pretend as if the self is real, a SAG theorist sincerely believes the self to be real. In fact the faith or belief in the existence of a self is not always made consciously.

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[4]Feminists across the board will protest at this juncture and say that whether one is a constructivist about the self or not, a self can never be understood as an individual, unrelated entity. A self is a relational thing, even if it stands in relation to just another self. So, the claim that there is no rationale behind our special preference for one individual over another will not be supported by feminists and other relational self theorists.

Such a faith may be hardwired in the human brain or developed as part of the process of socializing. Denial of an independent ontic status to the self does not mean denying the concept of self an evolutionary, sociological or survival value.

Origin of the contemporary SAC thesis:

To the seventeenth century French philosopher Descartes the self essentially meant a nonphysical, conscious principle, which was not identical with any physical thing (not even ones body). However the eighteenth century philosopher Hume did not agree with Descartes. Keeping pace with his empiricist spirit, he proceeded to investigate whether there was really such a non-physical conscious entity (self) apart from the body. And the conclusion he reached tallied with anything but that of Descartes'. Hume found that even if we monitor our experience closely we find a continuous flux of perceptions, sounds, memories and thoughts but no single experience to which we can refer to and say 'that's the self'. (We can contrast this with our felt experiences like 'tooth ache' or 'leg pain', which we can refer to pointedly). Again there is no singular continuous object with any spatial reference other than our body, which we can refer to as the self.

However for Hume too no statement seemed to be more obvious than the statement 'I exist' (Cogito ergo sum). Moreover when we introspect reflectively we do realize that that there is a single notion of 'me ness' or 'mine-ness' running throughout the entire strand of our experience. So when I hurt myself, I know the pain is mine. Again when I scold myself for being clumsy, I know it is me scolding myself. Though Hume too thought that these were reasonable beliefs (that there seems to be more to me and myself than just my body and its parts and my body is not simply equivalent to my self), but these beliefs do not contribute to the answer of the question "what is the self?"

So there poses a puzzle for Hume – I think, I am something and this thing which many call self is something we cannot observe at least like we recognize our pain or observe our body and our bodily parts. Now if the self is not something I can observe, then is it a mental construction, 'mode of thinking about my experiences'? If we have an affirmative reply to this question, then three tagged questions immediately come up: a) who is responsible for such a construction? b) what are the properties of this constructed self? and c)why do we at all construct such a notion of self?

Today due to progress in cognitive neuroscience, we are in a better position to address these questions than it was for Hume in the eighteenth century. The contemporary SAC theorists have tried to approach Hume's questions from a scientific perspective. Progress in cognitive science today has assured the theorists across the board that thinking is essentially an activity of the brain. So thinking, of oneself, as a singular thing existing throughout the fabric of ones' life must also be an activity of the brain**.** So in a very loose sense, we have an answer to Hume's question concerning the self. It must be the brain, which is responsible for constructing such a notion of self. As far as the question 'why does the brain at all construct such a notion of self?' is concerned, evolutionary biology suggests that such a concept plays a vital role or function in the 'neuronal organization' used to coordinate movement with needs, perceptions and memories and such coordination is directly related with the individual's survival and well-being. For human beings and other organisms with higher-level cognition such self-representational capacities are constructed to facilitate our thinking about the future.

In the section to follow I will address what one of the leading cognitive scientists Michael Gazzaniga has to say about how the brain constructs or generates our sense of self, that is to say generates the 'I' that I am. Before we enter into any expository investigations of theses on constructed self forwarded by these cognitive scientists, we first need to be clear about the difference senses of the word 'self'. While talking about the self, we at times compare our self in terms of 'object metaphors' (like I pushed myself to finish the work); again we at other times we talk of self in terms of 'person metaphor' like 'I have treated myself with a chocolate ice cream'. It is interesting to note that generally when we think of self as a person, we tend think of ourselves not in terms of a singular self but rather in terms of group of selves but these groups as if being parts of a unified partite entity I call myself. Thus we talk about our good self, our bad self, our public self, our private self and so on. Again in such cases mainly when we engage into describing our character traits, we may refer to one's real self which one may hide from public or reveal as required. This real self can be contrasted with the public self (we do not really talk about unreal self), which veils our true selves. Still at other times self is thought of as a project and thus we engage into self-improvement or self-discipline program.

What these strikingly diverse and contradictory metaphors suggest is that self is 'not a thoroughly coherent, single, unified representational scheme, rather the self is something like a squadron of capacities flying in loose formation'. These diverse metaphors also suggest the multifarious functional capacities we assign to the self. There are still other capacities which these metaphors cannot grasp which too are related with the functioning of self like detection of changes in glucose and CO_2 levels, explicit memories and many more. Thus the self as we know it now on the basis of neuro-physiological evidence is a collection of capacities and representations, each of which get activated under specialized circumstances and under specialized demands. One of the central requisites of this representationally coherent scheme we call 'self' is the ability to coordinate 'needs, goals, perception, and memory with motor control'. Neurobiology of self-phenomena mainly addresses issues related to the role or function of self-concept in making our inner life coherent.

Though there are large gaps in our knowledge regarding these self representational capacities, still we have knowledge about two important facts regarding the self, first it is not a thing or a substantive entity and even if it is a representation, it is not a single representation ('Self-representations may be widely distributed across brain tissue, coordinated only on a "as needed" basis, and arranged in a loose hierarchy'). Rephrasing Hume's problems in terms of self-representational capacity by the contemporary cognitive scientists has helped in formulating questions regarding the function of self better. Since majority of the contemporary SAC theorists have advocated the hypothesis that 'self' is actually a 'loosely connected set of representational capacities', it important to know briefly what exactly representations are in terms of neuroanatomy.

Representations are states of the brain or patterns of activity across groups of neurons, which carry information. For instance, a pattern of neuronal activity can embody information that something hot touched the left hand or that food is needed. So when we talk about a representational model, it considers a coordinated organization of representations embodying information about a connected set of objects and what changes occur in them across the temporal frame. So the brain can have a representation of the body, sensation of one's limbs etc.

Self representation comes in grades or degrees. Certain self representational capacities may increase or decrease depending on several factors including neurochemical secretions, behavioral state, task demands and immediate history. Self representation is a many-dimensional phenomenon, not an all-or-nothing phenomenon. Our memories of how we feel or what we saw or did forms an important part of our autobiography. And for each of us our autobiography contributes a major role in determining who we are. So it seems that autobiographical memory is necessary for conscious representation of oneself as an agent, as being a person. However few case studies reveal that autobiographical memory is really not essential for self representation. It is reported in Damasio lab (in Iowa City) that a patient who is called R.B suffered from Retrograde Amnesia. Due to attack of *herpes simplex encephalitis,* R.B suffered massive destruction of both temporal lobes including the overlying cortical areas, as well as the deep structures including the amygdala and the hippocampus. Resulting effect was that he lost all his memories of the past (whether he was married or not, whether he had any children or not etc).in short his autobiographical memory. Interestingly R.B retained some of the important features of self-representation. The most strong evidence in support of such a claim is that he would without extra effort refer to himself with the personal pronoun 'I'. Again there are cases of schizophrenic patients who have good amount of autobiographic memory but are still confused about self/non-self boundaries. This is referred to as depersonalization effect.

The Self in Cognitive Neuroscience: Gazzaniga's Version

What I am concerned with here is the notion of self as cognitive neuroscientists view it. Tracing the history of the SAG versus SAC debate, it is easy to arrive at a point where the neuro-scientific picture must get clarified. In a sense this cuts across the SAG-SAC barrier, since the picture painted by cognitive neuroscientists may be interpreted either way – as a SAG theory or as a SAC theory. We shall soon see why.

In this section I will briefly sketch Michael Gazzaniga a leading cognitive scientists' views on the origin of the notion of self. Gazzaniga in his book *The Mind's Past* (1998) gives us a detailed story of a self, which is nothing but a product of the 'brain's inventory power'. Gazzaniga argues that evolution has endowed us with a particular brain device called the 'interpreter', which creates a fictional or illusory sense of self. Thus an individual's sense that he is a unified self in charge of his actions and decisions is an

outcome of the illusion created by this brain device. This brain device has evolved through natural selection and is present in a human infant even at birth. Thus the fictional self generated weaves a narrative in which the traditional 'given' self gets the credit for issuing orders (nodding our head, going for a stroll etc) which are already executed.

While focusing on brain construction Gazzaniga asserts that most of the development of brain structure and functioning is genetically pre-programmed. He, unlike most developmental psychologists, lays less prominence on environmental factors and more on native ones as shaping our brain structures.

Now we may see why Gazzaniga's account may cut both ways. The reason why the neuro-scientific picture of self presented by Gazzaniga and many others like him may be interpreted as a SAG theory is that a very specific physiological part of the body may be assigned the central function of self, namely coordination. If a particular area or part or structure of the nervous system (brain) may be assigned that role, then one cannot but become confident about the ontologically concrete nature of the self. On the other hand, the necessity that is associated with the notion of a given self is missing in the neuro-scientific account of self. It is an evolutionarily contingent fact that a certain part of the body has taken upon itself the task of coordination. It could have been any body part or any part of the brain indeed. In fact, we might one day realize that the task of coordination may be carried out equally effectively by some other part of the brain in the face of certain environmental contingencies.

It is worth mentioning at this juncture that all SAC theorists do not endorse the same view regarding the issue of brain plasticity. An extreme version of this theory held by Steven R. Quartz[6] and Terrence J. Sejnowski[7] claims that brain is a *tabular rasa* and even ordinary everyday learning involves high degree of plasticity (neural constructivism). Moderate version of this theory claims that some particular ways of learning enhances the neurons for better and improved results. Again another extreme version of this theory from the other end of the graph would propose that neural

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[6] Computational Neurobiology Laboratory, and The Sloan Center for Theoretical Neurobiology, The Salk Institute for Biological Studies.

[7] Department of Biology, Howard Hughes Medical Institute, The Salk Institute for Biological Studies. University of California, San Diego.

mechanisms are completely hard-wired and any brain development is guided along this genetic trajectory (genetic determinism). Gazzaniga unfortunately unlike most theorists neither takes the empiricist pole nor the middle path but rather sides with the nativist pole[8]. He believes that though at times brain development seems to be driven by environmental or cultural factors, however it is dominantly driven by our genes. He remarks thus 'the broad scaffolding of the brain is genetic mechanism, which also control almost independently the specifications of what connect to what, but the details of cortical arrangements might be left to experiential effects. However the so-called experiential effects are nearly brain activity, not necessarily encoded information from the environment'[9]. Gazzaniga maintains (like Wolf Singer 1987, 1995) that some areas of the brain are plastic but such plasticity is limited in the sense it is directly related with the extent of genetic development. For instance the size of the eyeball at an early developmental stage is adaptive to some extent.

Gazzaniga instead speaks on functional plasticity rather than brain plasticity to account for the human uniqueness. To quote Gazzaniga 'Human have a greater functional plasticity than other species, and appear to have repertories of responses that go beyond the simple variability that allows species' to adapt to changed environments through selection'[10]. However while ascribing functional plasticity as belonging to the organism as a whole; Gazzaniga calls this sort of plasticity as something achieved by the highly developed brain itself. Gazzaniga develops a cognitive model based on what he calls "interpreter" to account for the complex human adaptive capacity. The interpreter 'is a capacity, or a set of mechanisms, that resides in the left hemisphere of the brain and its functions include enabling us to infer and form beliefs about both internal bodily states as well as external events (our own action and that of other)'[11].

This creative venture of the interpreter became all the more evident in cases of the split-brain patients. They are patients suffering from intractable epilepsy who do not even respond to drug treatments. The only available alternative treatment was to

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[8] This is where Dennett's critique of Cartesian Materialism may be applied to Gazzaniga's account.
[9] The Mind's Past, Gazzaniga, 1998 pg 46
[10] Gazzaniga, M.S., 1992, pg112, Nature's Mind. New York: Basic Books.
[11] Journal of Consciousness Studies,5.No 5-6,1998,p706-717.

surgically sever the commissures connecting the right and left hemisphere (commissurotomy) to avoid the excessive electrical activity generated within one hemisphere to be transmitted to the other hemisphere. This severing reduces the force of the convulsions and have relieved the patients to some extent.The hemispheres of their brains can no longer communicate with one another. In coping with this crisis, these patients will concoct narratives wildly (through their language producing left hemisphere) to conceal their ignorance of what their right hemisphere knows or perceives. Consider a split-brain patient whose left hemisphere is visually presented with a picture of a chicken claw and his right hemisphere is presented with a scene of snow falling. Now suppose the patient is presented with an array of pictures and asked to pick out pictures that are best associated with the pictures initially shown. As expected the right hand (controlled by the left hemisphere) points to the chicken while with his left hand he points to the shovel consistent with the snow scene presented to the right hemisphere. Now if we ask the patient why he selected the respective pictures, he would respond that the chicken goes with chicken claw while we need a shovel to clean the chicken shed. The reasonable interpretation which makes sense out of a piece of information that has its proper context registered in the right hemisphere (the shovel) is fully generated in the left hemisphere. In normal, non-split persons, the contextualized information from the right-hemisphere is conveyed to the interpreting mechanism in the left-hemisphere across the nerve fibers of the corpus callosum. The interpreter integrates that information and spawns rational coherence *vis-à-vis* other aspects of present and past experience.

Gazzaniga's central aim is to attack the traditional notion of self forwarded by most SAG theorists. He argues against the reality of self drawing on the evidences from cognitive neuroscience that what we supposedly call self is nothing but a product of brain's inventory power. Based on the research findings in the Sperry laboratory on the split brain subjects, Gazzaniga came to the conclusion that all our conscious activities, speech, free will etc are nothing but accomplishment of the brain cells. To begin with it is a very disheartening feeling to realize that we are simply puppets in total control of our brains so smart that they can even produce the illusion that it is we who control our own thoughts and actions. At this juncture one might doubt about the novelty of such a claim (illusoriness of a real self) since decades back even philosophers like Hume and Parfit and some schools of Buddhism asserted about the illusoriness of self. However the

evidences from which the contemporary SAC theorists draw such a conclusion are very different from that of Hume etc. Much of the arguments of the earlier philosophers were conceptual while the contemporary theorists have both conceptual and empirical arguments in their baggage to strengthen their claims.

Findings in cognitive neuroscience reveal that there exists an interpreter on the left hemisphere of the brain which lures us to a first person certainty about our own nature. This interpreter is neither a self nor a part of the self but just a brain device. The interpreter amalgamates information and fabricates rational coherence with our other experiences (both past and present). This function almost coincides with the function the ancient Greeks assigned to the rational part of the self. The left brain's interpreter work is to interpret (as the name suggests) our own behaviour and actions (both emotional and cognitive) against the backdrop of environmental challenges. It constantly generates a running narrative of our actions, emotions, thoughts, and dreams. It is the glue that keeps our story unified and creates our sense of being a coherent, rational agent.

The interpreter accounts for a reconstruction of our past experiences by weaving its story in order to convince us that it is we who is in full control. Moreover by generating this personal story or narrative the interpreter (spin doctor in the left brain)[12] gives us the feeling that a self exists, detached from the brain. Gazzaniga's main endeavor is to assert that such a detached self is, not only illusory but a sheer by-product of brain activity (the diverse workings of the cortically based systems working outside the realm of our conscious awareness). Our brain mechanisms control our cognition and behavior and not vice-versa in the sense that whatever we decide to do next our brain has already decided for us a few milliseconds ago ('By the time we think we know something - it is part of our conscious experience - the brain has already done its work. It is old news to the brain, but fresh to us')[13]. So viewed most of our memories are reconstructions to fill out gaps in the narratives our brain generates. A question may still linger in our mind will not Gazzaniga's left brain interpreter leave us dismally deterministic in the hands of the genes?

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[12] *Ibid*, p.26
[13] The Mind's Past p.63

Different action and occurring of our lives are plaited into a belief-system which is produced in the development of the brain, yet the scene is not so (dismally deterministic) since the interpreter makes room for unique development based on the personal experiences of the individual which is culturally tainted so the self is the product of the rationally inventive brain working collaboration with unique culturally structured experience. Thus this process paves the way for biases and interpretational prejudices tpo participate in the formation of our self concept. This stance stands as evidence to the fact that human brain transcends the automatic processes. The personal self which appears to us as an integrated entity is the product of the sub-personal inventive mechanism. So this is not a product of phenomenological construction but a hard wired mechanism designed to transcend its own material determination" Gazzaniga's model of self is the "outcome of a self organizing neuronal process that creatively incorporates biases, and even errors, in perception, memory and judgment ".

It has been questioned again and again whether the notion of real and substantial self can be totally dissolved into the illusory self thesis banking on the left hemisphere's 'interpreter'? It is worth mentioning here that though Gazzaniga himself calls the opening chapter of his book *The Mind's Past* as The Fictional Self, yet he never really claimed that the notion of self is fictional like many other cognitive scientists. First Gazzaniga mainly sketched how the interpreter, a brain device generates or contributes to our sense of self. So his thesis about the interpreter shows how our notion of self is constructed rather than the fact that our selves are fictions. Moreover the adjective fictional has a special connotation in Gazzaniga's scheme. In a conversation with Shaun Gallaghar in fact he remarks that 'Now in *The Mind's Past* the lead chapter is called "The Fictional Self" but that was to draw attention to the fact the interpreter calls upon all kinds of false information to build that narrative. So the construct that is derived comes from true facts of ones' life as well as false facts, which we believe to be true. The resulting spin that comes out as our personal narrative is, as a result, a bit fictional, like the idea we are in control of our behaviour'. So, the idea of a fictional self does not merely refer to the fact that the self is a construct but also refers to the fact that the story has its black, white and grey areas, some actualities and some imagination. So, 'fiction' here also means 'imagined' or even 'untrue'.

Again by citing such a novel view he intends to herald that the sermon (that we human beings have 'centric' view of the world) the SAG theorists have been preaching must be dissolved. To proceed with a serious scientific story of self we must stop 'think[ing] our personal selves are directing the show most of the time'.[14] Progress in neuroscience also shows that there is a disparity between what our brain does and how we experience such an activity.[15] So Gazzaniga asks us to shun the illusion of the existence of a centric self but the not the narrative it weaves no matter however fictional it may be for it serves a major role in our life like reasoning and '[enables] us to become psychologically interesting to ourselves as a species'[16]. However ardent critics of SAC theories have still not spared from shooting at him plenty of questions to be answered like~ isn't it hard to conceive that such an assumption (the feeling that we are endowed with some inner initiating cause of thought and action) could emerge without the contribution of culture and language that forges a preliminary idea of "I" allowing us to speak and think about ourselves as centric selves endowed with the power to produce autonomous action? Or may be an even more skeptical question like ~would a culture without the word for 'I' develop some idea of a centric self? A brief but significant reply to this question may be that the notion of self or 'I', though culturally and linguistically embedded is experientially or phenomenologically prior to culture and language. So even though a child may not learn self-talk but still be said to have self-experience as is obvious from the way it behaves and also from some of the theoretical writings available.

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[14] *Ibid*, p. xii
[15] In fact this led Dennett to search for a new method for studying the self and the mental, which he named Heterophenomenology (the SAG theorists' favourite being phenomenological method).
[16] *Ibid*, pg152