Chapter 1

Introduction
1.1. The Construct of Personality

The field of personality is one of the important areas in psychology. History of personality starts from when Hippocrates' classified personality according to the combination of certain bodily fluids viz. black bile, yellow bile, plegum and blood. Followed by Hippocrates, his disciple Galan classified people into four major types such as Choleric, Sanguine, Phlegmatic and Melancholic. Subsequently, Plato and Aristotle also made effort to classify people. As such the ancient thinking was mainly dominated by classifying people into various types. In addition to classifying people into types, Aristotle also gave some importance for physical aspect of personality. These thinking was further elaborated by Gall, a neuroanatomist, by the introduction of doctrine ‘Phrenology’ based on this he proposed that certain brain areas has some functions. He also proposed that the size of skull may give some information about people’s thinking and emotion.
classificational orientation of classifying people, the focus of interest vascillated to functional or dynamic aspect of a person. The pioneers who have been contributed for these kind of understanding of personality are by Sigmund Freud, Carl Jung, Karen Horney etc. Their psychodynamic theories were framed on a deterministic viewpoint and concentrated much on unconscious and/or conscious motives. In which Freud described personality in a structural viewpoint where he explained the role of interplay among ‘Id’, ‘Ego’ and “Superego” that contributes for the personality development as well as development of various psychopathology. As a disciple of Freud, Carl Jung viewed personality as a byproduct of various kinds of functions of consciousness, according to which he described various types of personality. Karen Horney focused on childhood experience and basic anxiety for explaining the construct personality. Followed by these theories the contribution from the field of behaviorism, social learning and humanistic theories tried to explain personality by their own theoretical orientation. Among this, the contribution of trait theories such as Cattele, Allport, Eysenck etc. to explain personality based on the dominance of certain traits which are believed to be biologically determined.

The biological orientation of personality further augmented by the definition provided by Golden Allport (1937). According to him the

"Personality is the dynamic organization within the individual of those..."
psychophysical systems that determine his unique adjustments to the
environment”. His definition of personality is considered to be one of the
important one as he explains various components such as a dynamic
organization, psychophysical system and unique adjustment which make a
personality of an individual. This definition clearly explains personality is an
out product of interaction between biological and the environmental factors.

1.2. Biological Perspective of Personality

In spite of the general acceptance of unconscious and conscious
motives on personality there was some other theorists that started accepting
the role of brain and cognitive functions on personality. According to the
famous personality theorist Carl Jung, “brain based mechanisms are
responsible for the symbolic representation of personality” (Jung & Jaffe,
1989) which is highlighting the role of brain for the functions of
consciousness, a major unit which determines a particular type of personality.
Followed by his contribution, various other theorists, especially the trait
theorists, tried to give a neuropsychological or cognitive explanation for one’s
personality. The work of Jeffrey Gray, Hans Eysenck, Rober C. Cloninger’s
and Paul Costa and Robert McCrae’s contribution towards neurobiological
basis of personality can be considered as a turning point in this kind of
perspective. According to Jeffrey Gray (1981) two major personality

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dimensions and its combination determines one’s personality, they are impulsivity (Imp-D) and anxiety (Anx-D). His theory is known as BAS (Behavior Activation System) and BIS (Behavior Inhibition System), in which he explained the personality on a neurological basis. According to this theory, people, who have high impulsivity (BAS) tends to be sensitive to reward with little concern with punishment, and on the contrary, people with high anxiety (BIS) will have low drive for reward with highly vigilant on punishment. The traits of impulsivity are believed to be controlled by the brain regions such as the medial forebrain bundle and the lateral hypothalamus and the anxiety is mediated by septo-hippocampal system.

Eysenck explained the role of biology of personality by his PEN model of personality (Eysenck & Eysenck, 1985). The PEN model is based on a hierarchical taxonomy. In the top level there will be three important traits such as Extraversion, Neuroticism and Psychoticism, which are considered by him as non correlative. Under which there will be some sub factors such as these are considered to be correlative. According to him these super factors are purely controlled by neurological, physiological or biochemical aspect of the individual. He proposed the ‘arousal theory’ to increase the testability of his principle (Eysenck, 1990). According to this theory, the extroverts need more cortical activation than introverts. The arousal is initiated by the Ascending Reticular Activating System (ARAS) to various cortical areas to
make them more outgoing and active where as the introverts becomes aroused in correspondence to stimulus intensity. The traits of neuroticism were explained by the activation of the limbic system. In the neurotic people, according to him, the activity level of the limbic system, which is considered to play a role in various emotional aspects, will be more with lower threshold. The gonadotropin hormone such as testosterone and monoamine oxidase are believed to play a role in the psychotic personality. But less research attention was obtained for its scientific validity.

Cloninger (1986) by his development of the tridimensional theory of personality, tried to establish the biological theory of personality. Which states that personality is an out product of the combination of certain independent but interactive biologically determined personality dimensions such as “Harm Avoidance, Reward Dependence and Novelty seeking” (Cloninger, 1986). According to him each traits are biologically determined all these trait are moderately heritable, normally distributed, developmentally and situationally stable, and associated with specific neural systems mediating stimulus-response relationships of different types (Cloninger, 1987). To measure the combination of these temperaments he also developed a tool Temperament Personality Questionnaire (TPQ) and later he included four more characteristics and changed the TPQ into Temperament and Character Inventory (TCI) (Cloninger, 1987). Cloninger (1986) was much more
successful in explaining the neurobiological correlates with predominance of these personality traits. According to him people who seems to be high in harm avoidance tends to have more serotonergic activity and people with high novelty seeking and reward dependence may have lower dopamine and noradrenaline activity respectively (Cloninger et al., 1994).

In 1992 Costa and McCrae formulated their lexical hypothesis to study personality with their theory of big five factors, which again defines personality factors according to the predominance of specific neurotransmitter as Cloninger established. According to this model, there are five major personality factors and each one has six different facets, combinations of which determines the personality. The five factors involved are neuroticism, extraversion, openness to experiences, agreeableness and conscientiousness. Based on this theory they have developed NEO-FFI (Costa & McCrae 1992). The theoretical model established to develop NEO-FFI is as equivalent to that of TCI, as the factors of each seems to have high correlating (Ramanaiah, Rielage, & Cheng, 2002).

From these theories, it is evident that studying the relation between the personality and neurobiology will provide promising results as highlighted by Eysenck (2006). The results obtaining from this will help the clinician to
understand the patient better and if the connections between these two are prominent, a strategy can be implemented where we can modulate the one which are easy to make an overall behavioral control. There is a special area of interest which is known as personality neuroscience dedicated to study the biological basis of personality. The major modalities, to studying the biological basis of personality, is by using electroencephalogram (EEG) and various other neuroimaging techniques which helps us to study the structure and functions of the human brain. The uses of psychometric assessment are also considered to be one among the various available approaches.

1.3. Neurochemistry and Personality

Neuro chemicals are substances (also known as neurotransmitters) which found in between synaptic cleft and which controls many of the cognitive, emotional and behavioral aspect of both human and animals. Among these neuro chemicals norepinephrine, epinephrine, dopamine and serotonin plays a major role in these aforesaid functions. Norepinephrine is a neurotransmitter, which has the ability to control the anxiety of a person for e.g. high levels of norepinephrine produces the large amount of anxiety that determines one’s fight or flight response. In the human brain, the brain stem, an area called locus ceruleus, which contains a large number of norepinephrine pathways. These pathways project towards cerebral cortex,
limbic system and spinal cord along with other projections. Neurotransmitter of dopamine has been implicated in various disease conditions such as in schizophrenia, Parkinson’s disease and substance use disorders. In schizophrenia, and Parkinson’s disease the higher amount of dopamine creates the person to have many positive symptoms and problems in the motor functions respectively, where as in the substance use disorders dopamine works as a pleasure activating agent. Zhong, et al., (2009) found that the neurotransmitters of dopamine and serotonin are linked to evaluation over gain and loss.

Some studies also investigated the relationship between temperament and neuro chemicals found that the temperament of novelty seeking is associated with high dopamine. One recent study done by Zald et al., (2008) to see the relationship between dopamine and human temperament of novelty seeking. They hypothesized that novelty seeking is associated with decreased inhibitory auto receptor control of midbrain dopaminergic neurons. In order to study this they examined D2 and D3 receptor availability in certain midbrain structures like substantianigra and ventral tegmental area. They selected 34 healthy subjects and they were undergone assessments with Temperament Personality Questionnaire (TPQ), an earlier version of TCI (Temperament and Character Inventory), along with other diagnostic assessments such as PET. They found an inverse correlation with novelty
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seeking and D2 receptor availability in these midbrain structures. The temperament trait of harm avoidance is speculated to relate with the neurotransmitter of serotonin. One recent study was done in eating disorder by Bailer et al., in 2011, and found that the serotonin 5HT2A binding in subjects with eating disorder who are considered to have high harm avoidance trait. According to Cloninger (1986) reward dependence is related to low levels of norepinephrine.

According to one model, the trait of impulsivity consists of four factors and this model is known as “UPPS” model. The factors of UPPS are Urgency, Premeditation, Perseverance and Sensation Seeking (Stephen & Donald, 2003). Boy et al., (2011) in their study found that the increased amount of GABA on dorso lateral pre frontal cortex is indicative of decreased traits of urgency aspect of impulsivity in healthy normals. Studies also evaluated the imbalance of Glutamate and GABA on aggressive behavior. This was established by the administration of anti-convulsants to patients suffering from seizure disorders, where the drugs play a role in regulating the aggressive behavior by influencing glutamate and GABA (Stanford et al., 2001). One study recently explored the role of neurochemical GABA (γ amino butyric acid) on trait of impulsivity in rats (Jupp et al., 2013).
The trait of sensation seeking, which is considered as having high genetic loading but certain neuro-chemical and related brain regions are connected with the sensation seeking trait of human and animals. In human, the traits are related to the gonadal hormone and monoamine oxidase. According to Zuckerman (2010), the monoamine systems in the rodent brain are involved in general activity, exploratory behavior, emotionality, socialization, dominance, sexual and behaviours which are directed to drive reduction.

1.4. Neuropsychology and Personality

Neuropsychology is a specialised branch of psychology, which deals with the relationship between brain and behavior. The past decades witnessed that the branch of neuropsychology mainly focused on the functional evaluation of different brain regions and in the rehabilitation processes of the various conditions. Current researchers have expanded the application of neuropsychological theories to other medical conditions such as cardiac diseases, migraine, obesity etc, which sometimes seem to be illogical at first glance. Studying the neuropsychology of individual characteristics such as temperament, trait, emotionality etc also can consider as one of those avenues where the contribution from the science of neuropsychology is pivotal.
According to Eysenck, the psychotic dimension of an individual may be due to the diminished inhibition of excited dopamine pathways in the nervous system (Eysenck, 1992). This model is established in various studies done in the field of psychotic illnesses, which is considered as a result of deficit in inhibiting excitated dopaminergic pathways (Kaplan & Sadock, 1995). Some other studies tested this hypothesis in related personality disorders such as schizotypal (Abi-Dargham et al., 2004) and schizoid (Farde et al., 1997). The role of psychoticism and dopamine is established by abnormal perfusion and metabolic activities in the certain mid brain structures such as basal ganglia and thalamus (Haier, Sokolski, Katz, & Buchsbaum, 1987). Certain cardinal features of psychoticism dimensions such as under reactivity, lower sensitivity, lowered fear and anxiety were tried to correlate with Gray’s BIS and BAS model. Fear was negatively correlated with psychoticism and in another sample it was found that this was inversely related to reward dependance. These studies clearly show the role of certain personality variables with neurochemistry and neuroanatomy.

Overall the BIS is related to a system which motivates a person from inhibiting certain behaviors, where the activation system of BAS is related to impulsivity explained purely on the basis of activation and inhibiting neural networks. Its personality correlates using other personality tests are few.

Dirk Smits and Boeck (2006) studied the relationship between BIS and BAS
with Neo-FFI factors. Their study found a strong relationship with BIS with neuroticism and BAS with extroversion dimension as explained by pioneers earlier in this field (Elliot, McGregor, & Thrash, 2002). Also, the factors of agreeableness and conscientiousness was also predicting BIS and BAS establishing clear cut link between these two different approach of the same construct ie. personality.

The direct relationship between BIS and BAS with neurophysiologic aspect was studied by Amodia, Devine and Harmon-Jones in 2007. Their study can be considered purely a cognitive neuroscience study. They included BIS and BAS questionnaire along with Electroencephalogram (EEG) and Evoked Response Potential (ERP) as measures to study the relationship between these two distinct psychological variables. They studied the relation with Go and No Go paradigm with BIS and BAS measure. Their study found that higher BIS was uniquely associated with larger No Go task and ERN (Error Related Negativity) amplitudes, which reflect greater conflict-related Anterior Cingulate Cortex (ACC) activity; whereas higher BAS was uniquely associated with greater left-sided frontal cortical asymmetry, which has been associated with approach orientation in past work.

In another study by Mardaga and Hansenne (2007) tried to correlate with Temperament and Character Inventory – Revised (TCI-R) with BIS and
BAS model. They did the study with 150 healthy subjects in that half of the participants comprised of the female gender. They found a positive correlation or link between behavior inhibition and TCI variable of Harm avoidance and Novelty Seeking with BAS. The correlation found to be sensible and theoretically sound. The relationship between TCI and various neuropsychological functions was done by Bergvall, Nilsson and Hansen, (2003) in a sample of personality disorder subjects. They studied using sub tests of Cambridge Neuropsychological Test Automated Battery (CANTAB) such as visual working memory, attentional set-shifting and planning. They found that in TCI variables, subjects scored a high score on Harm Avoidance and low score on Self Directedness and Cooperativeness in personality disorder group. Among the relationship between neuropsychology with TCI, they found personality disordered offenders were made high errors on attentional set shifting task when comparing with control group, the deficit in set shifting task was associated with Self directedness and Cooperativeness.

One recent study also tried to evaluate the relationship between TCI and various computerized neuropsychological test tasks using the University of Pennsylvania Computerized Neuropsychological Test Battery (Penn CNP) (Cassimjee & Murphy 2010). Using the battery the executive functions of the subjects were evaluated using the tests of Motor Praxis (MPRAXIS), the Penn Abstraction, Inhibition and Working Memory Task (AIM), the Letter-
NEBack (LNB2), the Penn Conditional Exclusion Task (PCET), the Penn Short Logical Reasoning Task (SPVRT). The results of their study showed that the temperament of Harm Avoidance and Reward Dependence was positively related to reaction time on abstraction, inhibition and working memory (AIM) task and characters of Self Transcendence was significantly correlated with accuracy on AIM and finally their study revealed a negative correlation with Novelty Seeking and performance accuracy on the Letter-N-Back. Their study thus concluded with the significant relationship between personality temperaments assessed using TCI and various neuropsychological measures. These studies establish the strong relationship between temperaments and certain neurophysiological aspects as suggested by other pioneers in the field (Henderson & Wachs, 2007; Whittle, Allen, Lubman, & Yucel, 2006) and shows the relevance of associating personality with neuropsychology become meaningful.

1.5. Integrating Personality with Neuropsychology in Alcohol Dependence Syndrome

The use or abuses of psychotropic substances, especially alcohol, are evident from the prehistoric period. The production and consumption of fermented beverages are believed to be used even from the Neolithic period, nearly in 10,000 BC. Cambyses, the king of Persia in the sixth century B.C.,
was the first known victim of alcoholism according to the literature. The long term use of it made him psychotic in his later years. Evidences of consumption of alcoholic beverages were apparent in India during the Indus Valley civilisation; they produced and consumed some special kind of wine in the name of Soma and Sura.

In modern times, the use of alcohol has become widespread and which gives the society a culturally different characteristics. World Health Organization predicted in 1980 that the twenty second centuries witness an increased rate of prevalence and incidence of substance abuse and dependence (WHO, 1992). In United Sates a Nationwide study conducted was done during the period 2009 – 2011 by the Centre for Disease Control and Prevention found a prevalence of alcohol dependence among people older than 18 years as 3.5 percent, which was raised into 11.3 percent two years latter (National Survey on Drug Use and Health, 2013). In India, the studies done in 1971 reported a lower rate of alcohol prevalence from 13 per 1000 (Elnagar, Maitra & Rao, 1971).Which latter becomes 19.1 percent, with the strict criteria have been used to diagnose (Girish, Kavita, Gururaj, & Benegal, 2010). There are different views regarding this tendency. This rising tendency can be discussed in the context of various kinds of sociocultural and educational transition and its influence on personal resources. Chavan, Arun, Bhargava and Singh (2007) has the
opinion that lack of diminished personal resources and change from joint to nuclear family leads the individuals to exhaust his natural tendency to cope better in the context of increasing amount of stress in day to day life.

Many of Alcohol related problems are influenced by a person’s psychological, biological and social factors. The efforts, to integrate all these factors, were considered in the diagnostic systems such as DSM-V and ICD-10. The DSM-V describes alcohol as the “most frequently used brain depressant” in most cultures and a cause of considerable morbidity and mortality”. Another common agreement in the both the criteria are the alcohol induced psychiatric conditions. Both the diagnostic system acknowledges that the long term use or abuse of any substances like alcohol will induce certain psychiatric conditions such as hallucination, delusions, mood disorder and other psychotic illness. All these are due to the long term use which makes changes in the brain chemistry and anatomy resulting in such chronic conditions.

But except few not everybody who consumes alcohol turns into a dependent. These few are known as the vulnerable. Then the question arises what are the factors which make a person vulnerable for developing dependence. It may be impossible to say a single cause which makes a person vulnerable, but many factors interact among themselves to make a person...
Among these genetic, personality, neurological, emotional, and behavioral factors, are believed to play a major role (Cox & Klinger, 1987). For the purpose of bringing all these factors it is easy to classify these vulnerable factors or markers into three major domains such as biological, psychological and social factors according to biopsychosocial model of illness (Engel, 1977).

Among the biological theories the major area are in the field of genetics. The genetic studies show the substance use problems run in families. Studies done among children of alcoholics (CoAs) found that they have four to nine times increased risk for developing alcohol related problems than in the general population (McGue, 1994). This increased prevalence of alcohol use in CoAs was found to be high even after controlling the effect of shared environment among twins, indicating the inheritance of this chronic illness (Heath et al., 2001). Subsequent twin and adoption studies further established the role of gene on various aspect of addiction such as the biological mechanism of inheritance, drive, addictive behavior, biological mechanisms, metabolism of various addictive substances and its psychological experiences (Dick & Agarwal, 2008).

Along with the genetic causes a number of psychological factors are believed to play a major role in the process of development and maintenance of addiction. In the history, it was considered as the ‘moral’ model of
addiction (Verheul, Brink & Hartgers, 1995). According to this model, people, who used to abuse alcohol or other drugs, are considered to be immoral or possessor of bad behavior or character. Followed by this model another model came into existence during 1930s which was trying to explain the addiction in terms of some underlying pathology, according to symptomatic model, and they attributed personality as major one among them. During this period researchers started their quest for ‘alcoholic personality’. But in spite of many studies they have hardly identified the evidence of different and distinct personality among alcoholics. Based on some of the reviews by Syme (1957) and Lisansky (1960) confirmed that there is no such particular personality which predicts alcoholism as summarized by Keller (1972). According to him person who abuses alcohol may have more or less of particular psychological or personality traits than non alcoholics (Keller’s Law 1972).

Studies still continued with newer approaches in the scientific community. In one study by Kendel and Yamaguchi (1985), found that people, who are having heavy drinking, have some dependency prone pre drug characteristics such as rebelliousness, adjustment and emotional problems. In another study by Shedler and Block (1990), found that depression and sensation seeking qualities are found to be higher in people who got addicted to alcohol. Study by Masse and Tremblay in 1997
confirmed that certain personality traits such as impulsivity, nonconformity to society, a sense of alienation, poor frustration tolerance are found to be pre drug characteristics among people who abuses alcohol. But all these studies were unable to identify a particular personality styles among these group and studies have to be given up (Mulder, 2001). But in the twentieth century again the interest in the relationship between personality and alcohol abuse regenerated mainly because of the cognitive behavioral explanation provided by Beck that the addiction is a behavioral reflection of underlying schemata or believe generated by personality pathology. Followed by Beck, a series of studies has been initiated with new longitudinal methods to find out the relation between personality of alcohol dependence and also to find out the predictors of heavy alcoholism. According to Vaillant (2003) and Zucker (2006) certain pre morbid factors such as family history, alcoholism, behavioral deviance and childhood temperament such as impulsivity, emotional dysregulation all predicts the progress and maintenance of alcoholism in addition to its prognosis. These observations help us to conclude that they have some personality traits which makes them distinct or unique and this can be considered as critical to the study of personality among alcoholics.

Not only the personality but also certain traits or character of a person which makes him/her alcohol dependent. The studies on co morbid condition
prevailing among dependence reveal a significant amount of mental illness more over personality disorder has been identified. The prevalence of personality disorder among patients who are admitted for alcohol related disorders are found to be more than 70% (Moran, 2002). A study by Power in 1996 observed that there will be at least one DSM-III-R diagnosis will be there prior to the onset of alcohol dependence. In another study, it was found that the prevalence of antisocial, dependent and histrionic personality disorders is more common (Grant et al., 2004). Hasin, Stinson, Ogburn and Grant (2007) found that the prevalence of personality disorder comes as a major secondary diagnosis along with other mood and emotional disorders based on DSM IV criteria, and also they highlighted for the rigorous treatment to address all these condition along with the need for proper education for patients to help them better. Echeburua, De Medina, and Aizpiri in 2009 studied the prevalence of personality disorder using International Personality Disorders Examination (IPDE), which is an interview schedule based on ICD-10 criteria for personality disorder and they also observed that the prevalence of dependent personality along with other personality disorders such as obsessive compulsive and paranoid personality disorder. They didn’t found any prevalence of anti social personality disorder or histrionic personality disorder as evidenced by previous works. From
these studies, it is quite obvious that the prevalence of personality disorder is quite a common irrespective of the type of personality disorder.

Whether it’s the syndrome which makes the person to have a particular personality or the personality itself which makes a person to become addict is not yet clear to the scientific community. As mentioned in the earlier section of the chapter integrating neuropsychology with personality may able to provide an answer for this question. Because various studies done in these two diagnostic conditions do accept the neuropsychological differences. A lot of studies have been initiated to identify the neuropsychological deficits in this two conditions and one can ascertain that the diagnostic conditions which received much attention from neuroscientists.

Various neuropsychological functions of alcohol dependence were examined by the researcher in the field. During the early period the complete neuropsychological assessment was done to examine the role of brain involved in chronic alcoholism. Based on their findings, it was noted that mild to moderate level of deficits are prominent involving various brain areas in people who abuses alcohol (Parsons & Leber, 1981). But subsequent studies in the field further narrowed down the concept by doing large number of investigations and theorized that the brain regions involved much in the prefrontal cortex and hippocampus (Parsons, 1998). His findings suggests that people with longstanding alcohol abuse will compromizes one’s working
memory, executive functioning and learning abilities. Subsequent studies further tried to establish whether these cognitive dysfunctions are reversible or not due to long term abstinence. Nowakowska, Jabłkowska and Borkowska, in 2008 conducted a study to see the effect of abstinence on neuropsychological test performance and found that though the long term short term abstinence does have any role in frontal lobe dysfunctions but long term abstinence has an influence on attention dependent processes.

There is a direct relationship between alcohol use and subsequent brain dysfunction. In an etiological point of view alcohol addiction runs in families and children of alcoholics are more considered to be at risk for developing alcohol related problems (Goodwin, 1985). Among the risk factors identified the role of cognitive functions has been highlighted by Robert and Kenneth (1995). According to Peteson, Rothfleisch, Zelazo and Pihl (1990) these cognitive dysfunction often predispose these children of alcoholics to have particular behavioral problems and thus alcoholism. The questions arises what comes first whether this premorbid cognitive function contributes for later alcohol addiction or these behavioral issues which we can assume a person predrug characteristics contributes for addiction. As discussed earlier in this chapter, like predrug personality characteristics whether there exist any pre drug/pre morbid neuropsychological deficit exists in people who abuses drugs. To address this problem, Liao, et al., (2012) recently conducted
a study among opiate dependents and found that certain premorbid neurobehavioral problems was elevated prior to the initiation of drugs. Based on these available information it can be hypothesized that the people who are dependent on drug, irrespective of whether they are from alcoholic family or children of alcoholics, are born with certain neuropsychological deficits as well as behavioral or personality characterizes which further agrevated due to the long lasting alcohol use. So creating a link between personality and neuropsychology in this diagnosis may yield good and valuable information.

1.6. Need and Significance of the Study

The role of genetic, psychological and environmental factors are hard to separate from one another in the context of addiction leading to rely on its interactional effect. It may be hard to assign a single genetic or psychological theory as sufficient enough to prove the cause of alcohol addiction. Therefore, focusing on the underlying cause of addictive behavior is more important. As such it is believed that personality of a person is unique and seems to play a key factor that determines the vulnerability for dependence.

To study the personality, assessment plays a significant role. A number of tools are available to assess a person with an addiction on his various aspects such as emotional factors, personality factors and neuropsychological functions and so on. But the development of a single tool which may assess
the majority of these factors among these people are highly appreciated in the current scenario for economical and time factor. Currently in India, the utility and validity of such tools are questioned on various grounds such as the methodology opted for standardization and validation, the population used for creating the norms etc. The clinicians in India hardly spend time on research and developments of tests and more over most of the clinicians are devoting their services in the field of clinical practice. Not only that, developing and standardizing a culture fare test in country like India will also too difficult due to her multi cultural and multi linguistic characteristics. Due to this factor many times, the tool developed in one part of India may not applicable to the other part of the country because of the seculatural and linguistic diversity. So developing and standardizing a tool in India is not as easy as its happening in the west. In this context, effort has to be made to increase the utility and applicability of available tests. In India, as mentioned before most of the tools especially neuropsychological assessments are standardized by and for the English speaking people. The development of a tool which is out of these barriers especially language and complex instructions will be an opportunity for psychologists to create better role in the field.

Rorschach inkblot test is one such tool which is out of the use of language and complex instructions and the current scoring and interpretive
system of Comprehensive System by Exner’s much more scientific and empirical for evaluating the personality of the person in detail. The test is also highlighting the role of cognitive involvement in processing the Rorschach stimuli indicating implication for developing Rorschach test as a test for neuropsychological abilities. Efforts to identifying dynamics and structure of the alcoholic personality using these projective tests such as Rorschach or TAT are limited and available studies were criticized various grounds especially on subjectivity of interpretation (Exner 1993). For example, as far as the Rorschach technique is concerned various methods of interpretation are there such as Beck’s method, Piotrowsky’s method, Klofler’s method, Rapaport-Schafer and Exner’s Comprehensive System. Among these methods except Exner’s Comprehensive System other systems of interpretations are following the principles of psycho analysis such as free association and hence the interpretation also phenomenological, which often contradicting the psychometric principles of reliability and validity of assessment and results. In spite of certain criticisms on inter rater reliability (Lilienfeld, Wood & Garb, 2000) incremental validity (Wood, Nezworski, Garb and Lilienfield 2001) and criterion related validity (Wood, Nezworski and Stejskal, 1996) Exner’s system is considered to be widely used Rorschach system and it yields more reliable data than the other systems.
The use of Exner’s Comprehensive System has been validated in many psychiatric and emotional conditions such as in schizophrenia, depression, coping deficits, hyper vigilance and suicide (Exner 1993; 2003). The test also validated in other disease conditions such as obsessive compulsive disorders (OCD), depressive disorders, psychotic illnesses etc. But the literature on alcohol related to Exner Rorschach is very few both from the west and also from India.

To conclude there is a growing body of research that suggests that neuropsychological and personality evaluation may contribute to a better understanding of an individual than either procedure alone. From the perspective of biological perspective of personality and neuroscience of personality the neuropsychology and personality can be integrated and in which different approaches to this interface issue can be analyzed. But the knowledge regarding how findings from personality tests and neuropsychological tests are integrated is not clear, and so far specific guidelines on the interpretation of this issue have not emerged in the literature. Furthermore, there is little understanding about which personality assessment procedures will be useful in complementing neuropsychological procedures because personality tests were not designed for this specific purpose. Consequently, there has been little research investigating how personality measures are best assessed within the context of
neuropsychological, and vice versa. Therefore, some obstacles are needed to be navigated if personality assessment is to make neuropsychological sense. So the current study implicated on integrating these two approaches, and in turn to study systematically the structural relationships between indices of neuropsychology and personality. An appropriate starting point could be the exploration of the relationship between personality structure as measured by Rorschach and related neuropsychological abilities or deficits. Understanding the relationship between personality traits and neuropsychological functions with alcohol abusers would implicate better clinical management, as specific management in coping skills, self-control techniques, and in broader terms relapse prevention indicators can be emphasized. Understanding from this study also helps the clinicians to provide the victim of alcohol abusers with certain personality forms of training in coping skills, self-control and relapse prevention.

Taking a lead from all these information the current study designed to create a personality profile of the person with alcohol addiction or alcohol dependence syndrome and to study the neuropsychological deficits commonly found in these people. This study also intended to find out the relationship between their personality factors identified using Rorschach Inkblot test and neuropsychological functions.
1.7. Statements of the Problems

Taking a lead from the aforesaid understanding present study is an attempt to 1) create a personality profile of patients with alcohol dependence syndrome using Rorschach Exner’s Comprehensive System, and 2) to see whether the findings on personality obtained through Rorschach Exner’s Comprehensive system can be related to various neuropsychological functions of patients with alcohol dependence syndrome.

1.8. Objectives

1) To investigate the personality structure of the patients with alcohol dependence syndrome in comparison with healthy normal subjects using Rorschach Exner’s comprehensive system.

2) To study the neuropsychological profile of patients with alcohol dependence syndrome in comparison with healthy normal subjects.

3) To find out the relationship between specific personality structure and related neuropsychological functioning in patients with alcohol dependence syndrome and healthy normal subjects.
1.9. Hypothesis

1) There will not be any significant differences between alcoholic and healthy normal subjectson variables of Exner’s’ Comprehensive System.

2) There will not be any significant differences between alcoholic and healthy normal controls subjects on performance in various neuropsychological variables.

3) There will not be any significant relation between variables on Rorschach Exner’s system and neuropsychological variables.

1.10. Operational Definitions

1.10.1. Personality: According to Golden Allport personality can be defined as the dynamic organization within the individual of those psychophysical systems that determines his unique adjustments to the environment.

1.10.2. Rorschach Exner’s Comprehensive System: Comprehensive system is a standard method for interpreting the Rorschach test. It was developed in the 1960s by John E. Exner, as a more rigorous system of analysis. It has been extensively validated and shows high inter-rater reliability. The key components of the Exner system are the clusterization of Rorschach variables and a sequential search strategy to determine the order in which to analyze them, framed in the context of standardized administration,
objective, reliable coding and a representative normative database. The system places a lot of emphasis on a cognitive triad of information processing, related to how the subject processes input data, cognitive mediation, referring to the way information is transformed and identified, and ideation.

In the system, responses are scored with reference to their level of vagueness or synthesis of multiple images in the blot, the location of the response, which of a variety of determinants is used to produce the response (i.e., what makes the inkblot look like what it is said to resemble), the form quality of the response (to what extent a response is faithful to how the actual inkblot looks), the contents of the response (what the respondent actually sees in the blot), the degree of mental organizing activity that is involved in producing the response, and any illogical, incongruous, or incoherent aspects of responses. It has been reported that popular responses on the first card include bat, badge and coat of arms. Using the scores for these categories, the examiner then performs a series of calculations producing a structural summary of the test data. The results of the structural summary are interpreted using existing research data on personality characteristics that have been demonstrated to be associated with different kinds of responses.
1.10.3. Neurocognitive Functions: The branch of psychology that deals with the relationship between the nervous system, especially the brain and mental functions such as memory, learning, language, and perception. The field studies about the functional aspects of various higher mental abilities.