sulci than gyri. They had slightly different patterns of abnormality in lobar subregions, but both groups had significant abnormalities in the frontal lobes. These results suggest that the neurodevelopmental processes that affect gyrification begin relatively early. Longitudinal studies are needed in order to refine our knowledge concerning the time of onset of gyrification abnormalities and the underlying developmental mechanisms.

S57.2

The brain morphology of schizophrenia

P. Falkai*. *Department of Psychiatry, University of Bonn, Germany*

Meanwhile it is clear that schizophrenia is a brain disorder. Based on several metaanalysis it is clear that structurally the following changes are present: reduced whole brain volume, increased ventricular volume and decreased hippocampal volumes bilaterally. Due to a lack of signs for a typical neurodegenerative disorder these changes are supposed to be a consequence of disturbed brain development. Recently many researchers have tried to link such changes with the molecular basis os schizophrenia. Data are presented using the gyrification index (GI) in schizophrenia fullfilling this premise as an endophenotypic marker. Such markers should help to disantangle which morphological markers are relevant for schizophrenia.

S57.3

Are brain changes in schizophrenia focal and are they progressive?

R.S. Kahn*. *University Medical Center, Department of Psychiatry, Utrecht, The Netherlands*

Numerous neuroimaging studies have shown structural and functional brain abnormalities in schizophrenia. One of the open questions is whether the structural abnormalities in the brains of schizophrenia patients are confined to specific areas and whether these changes are progressive over time. In several studies our group has examined these issues. We found that gray matter changes are progressive over time in first episode and in chronic patients with the schizophrenia and that some of these changes are related to outcome of the illness. Moreover, certain areas are affected more than others, such as the amygdala, the medial temporal and frontal areas. Also changes in the thalamus are pronounced and may be related to the risk of schizophrenia since these changes have also been found in first relatives of patients with schizophrenia. In contrast decreases in frontal gray matter may be related to the illness itself and to its outcome. Data from structural imaging studies of our group will be presented.

S57.4

Heteromodal association cortex involvement in schizophrenia

T.E. Schlaepfer[1]*, G. Pearlson[2]. [1]*Psychiatric Neuroimaging Group, University Hospital Bern, Switzerland*
[2]*Division of Psychiatric Neuroimaging, The Johns Hopkins Hospital, Baltimore MD, USA*

The heteromodal association neocortex (HASC) is believed to be a major site of involvement in schizophrenia. The HASC areas comprise a highly integrated, reciprocally interconnected system which coordinates higher order cortical functions. It includes the prefrontal cortex and portions of the superior temporal and inferior parietal cortices, which are linked in cognitive networks observing complex executive functions. The HASC is highly elaborated in humans and is believed to continue to develop long past birth. The neuropathology of schizophrenia is most certainly heterogeneous and appears to involve developmental abnormalities, but there is mounting and converging evidence of HASC involvement in schizophrenia.

S57.5

Time course of structural brain changes in schizophrenia: an update

A. Vita*, L. De Peri, M. Dieci. *Department of Mental Health, Azienda Ospedaliera di Melegnano Milano, Italy*

The neurodevelopmental vs neurodegenerative nature of brain pathology in schizophrenia has long been debated in the last decades.

Longitudinal studies of structural brain changes have the highest potential for clarifying this issue.

Unfortunately, the relative literature is largely discordant and shifted in the last fifteen years from a nearly general agreement on substantial stability of brain morphological features to a nearly general agreement on the occurrence of a certain progression of some brain structural abnormalities over the course of schizophrenic illness.

Different factors (e.g. methodological, clinical, treatment issues) may play a role in determining such discrepancies as well as structure-specific time course of changes may be hypothesized.

The issue is quantitatively and critically reviewed in the lihgt of the competing pathophysiological hypothesesnof brain pathology of schizophrenia.

S57.6

Brain morphometry and auditory hallucinations in schizophrenia

P.W.R. Woodruff*. *Sheffield Cognition and Neuroimaging Laboratory (SCAN Lab), University of Sheffield, UK*

The aim of the presentation will be to explore the different ways of examining links between brain structure and the development of auditory hallucinations in schizophrenia through a critical evaluation of a series of published studies and new approaches.

A number of studies have used magnetic resonance imaging techniques to examine brain morphology in patients with schizophrenia who experience auditory hallucinations, or those predisposed to develop these symptoms, in an attempt to identify specific associations between brain structure and auditory hallucinations. Studies, using a region of interest method, have, for instance, shown an inverse correlation between volumes of temporal lobe regions (superior temporal gyrus, planum temporale) and auditory hallucinations in patients with schizophrenia. There is a suggestion, not universally observed, that these findings are lateralised to the left. Voxel-based morphometry studies have revealed additional brain regions that may be involved in those patients with schizophrenia who experience particularly severe auditory hallucinations. Using these techniques together with functional techniques opens up the possibility to examine in detail structure/function relationships in the pathogenesis of auditory hallucinations in schizophrenia.