A particular dimension of syntactic structure that has been addressed from theoretical and computational linguistics as well as psycholinguistics regards the configuration of embedding. It is common to distinguish right branching structures from structures with a complex left branch and structures with a complex internal branch (sometimes called center embedding). A working hypothesis that has been assumed by a number of papers in the field of cognitive neuroscience of language is that a brain region which shows a differing activation pattern to these different types of syntactic structures can be considered to participate in the `syntax network'. This apparently simple hypothesis faces two important challenges. The first is that syntactic structure covaries with a number of other linguistic properties (semantics, working memory, prosody, frequency of use, etc.). The second challenge is due to the univariate subtraction logic of most fMRI designs. For the logic to be valid, the two compared structures can't simply be different but one needs to be `more difficult' or otherwise cognitively more costly. I will present the results of and experiment where we tried to address these two challenges by (a) using a novel linguistic domain (coordination structure) where the variation in syntactic structure has minimal other consequences, (b) controlling for the prosodic effects of the syntactic manipulation by orthogonally manipulating prosodic complexity and (c) replacing the subtraction logic by a classification procedure which allows us to identify regions where the multivariate pattern of activation differs across conditions. Beyond the specific results and implications of this experiment, this work exemplifies a general strategy for the (re)integration of linguistic theory and neuro-cognitive experimental methods.