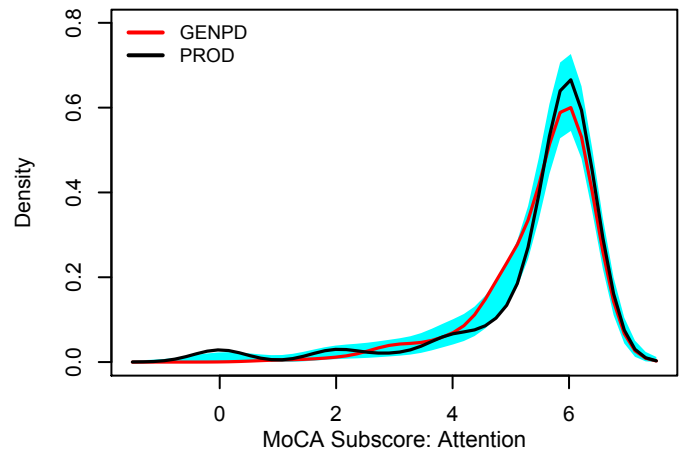
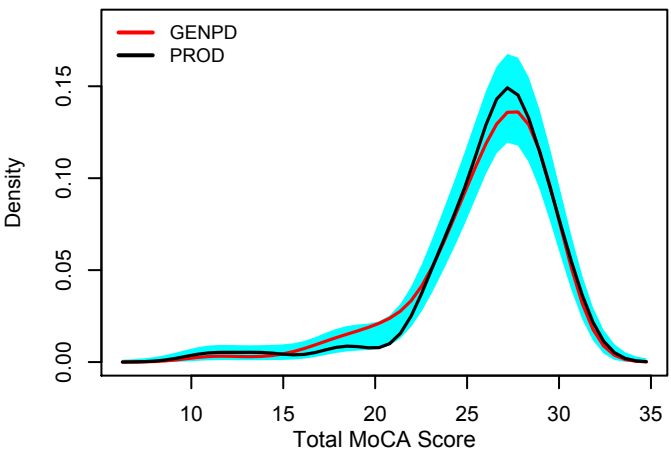
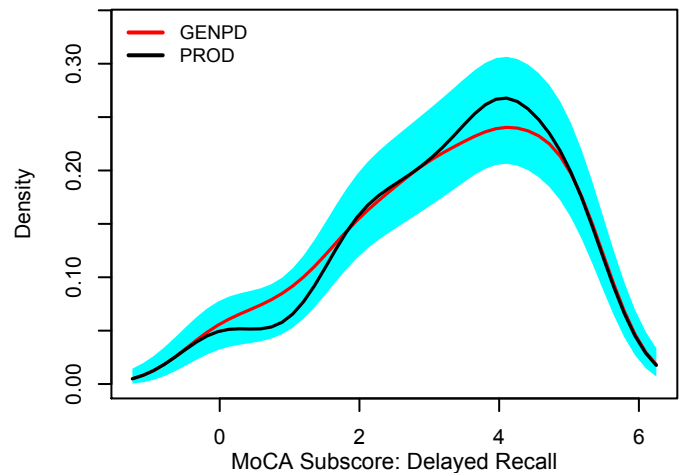
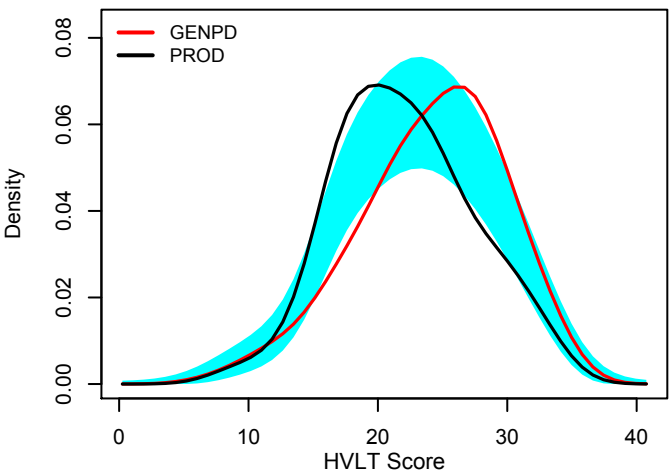
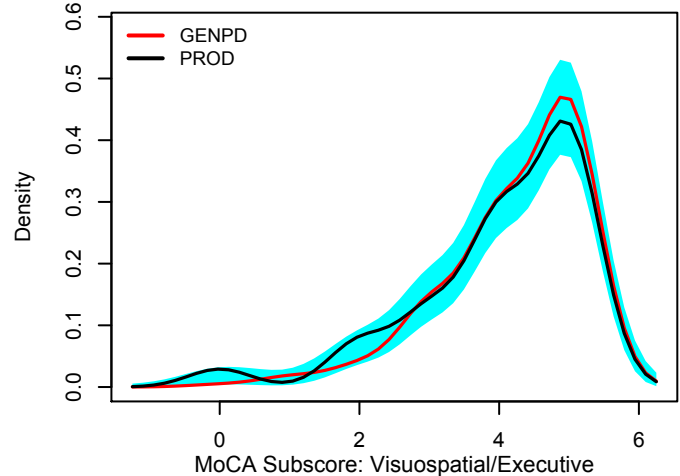
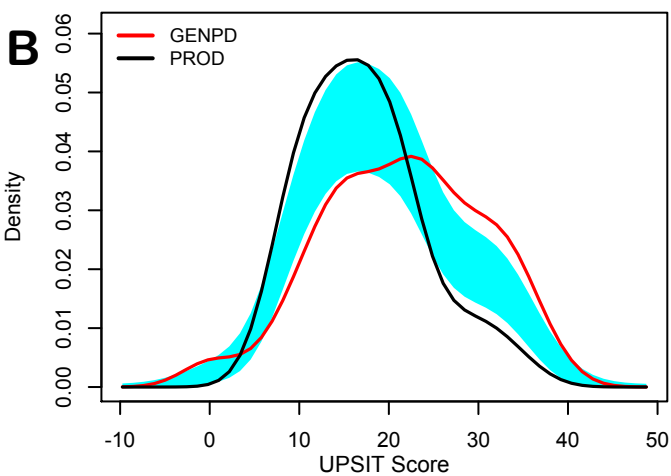
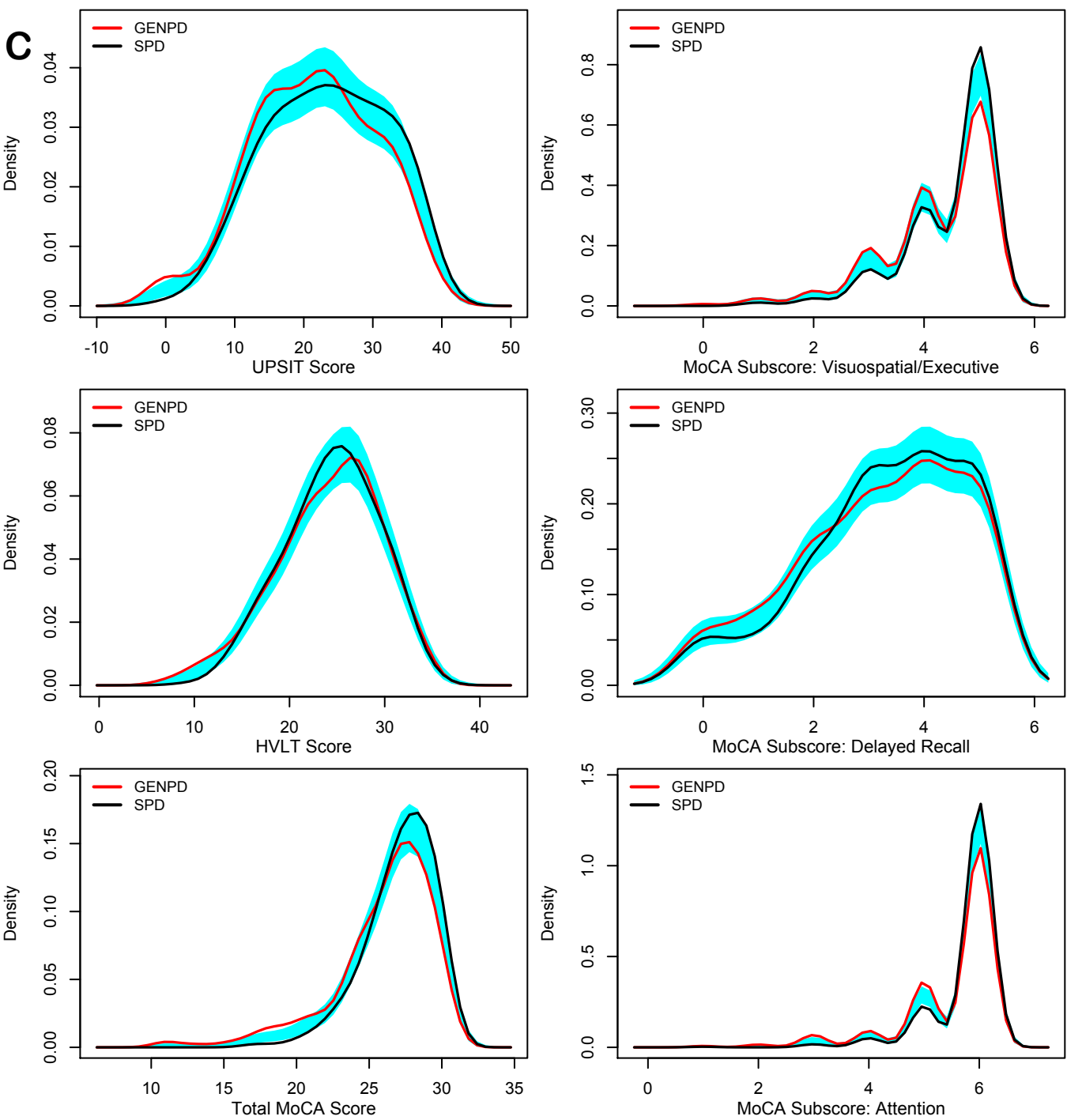
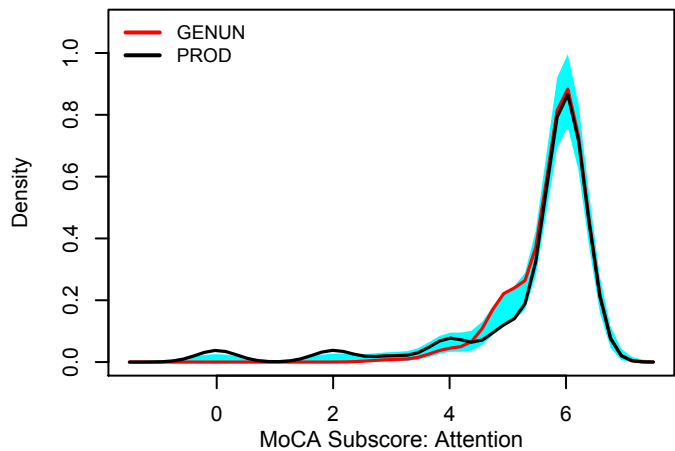
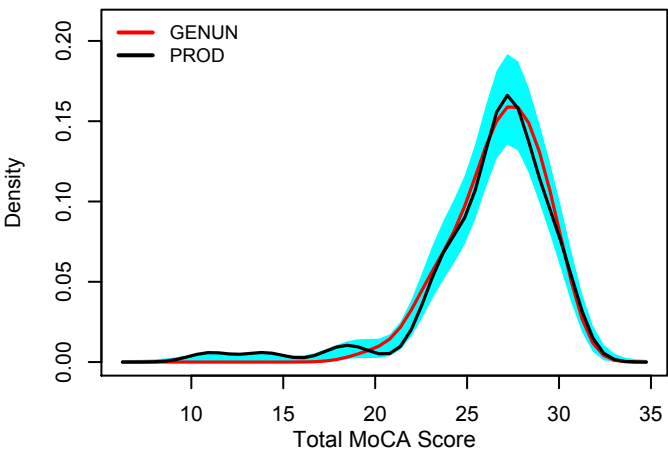
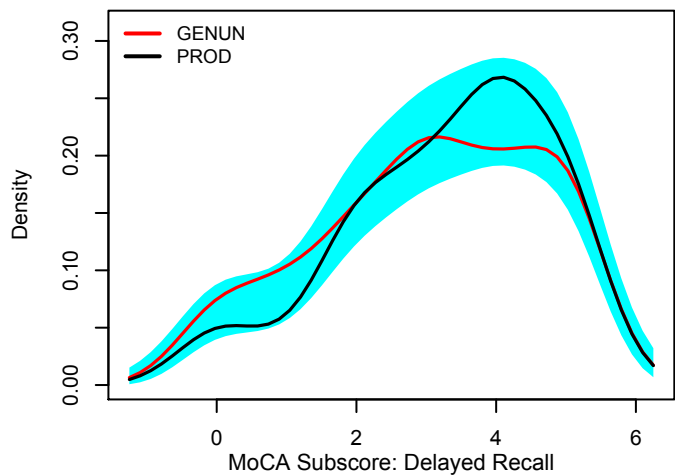
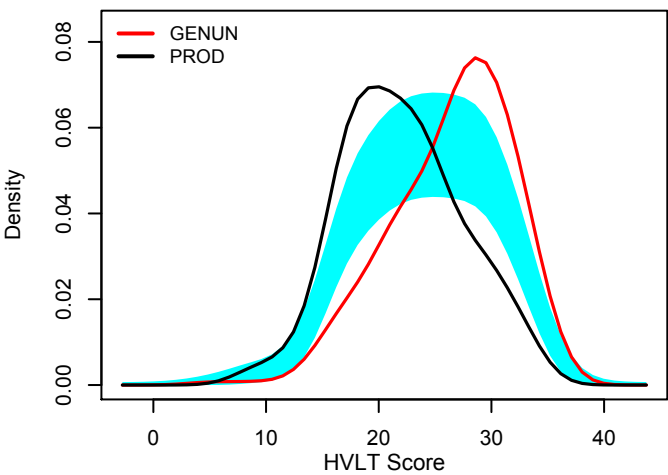
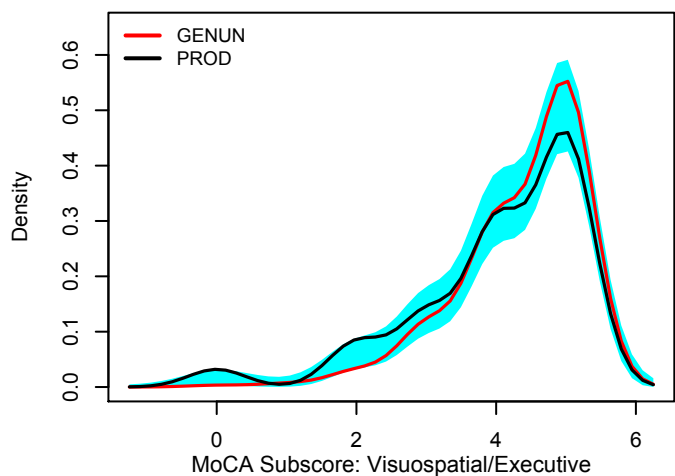
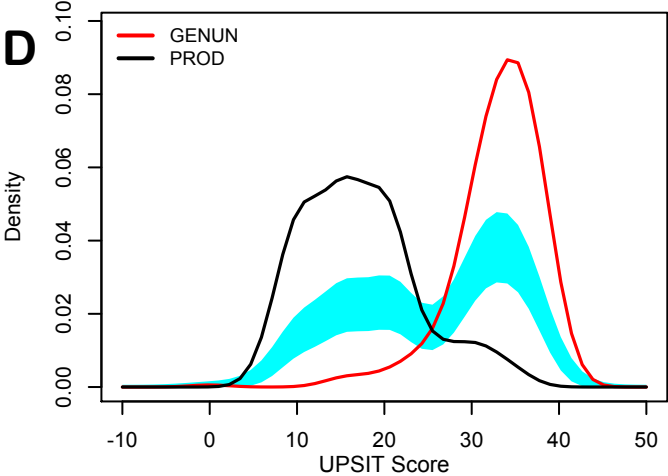
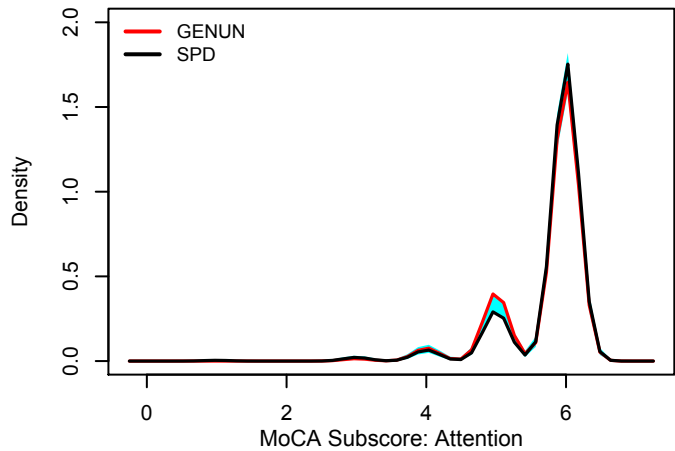
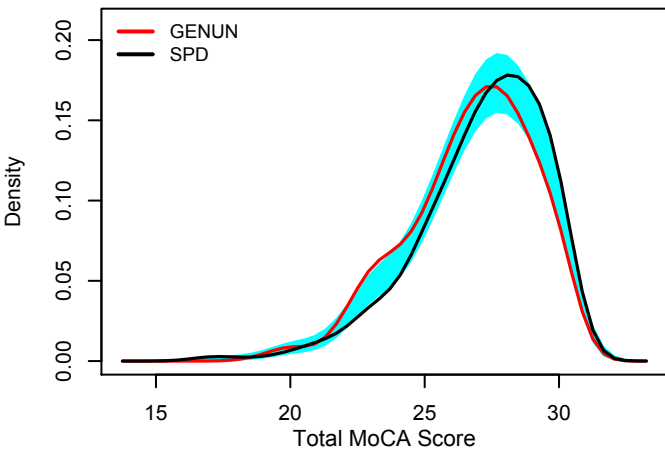
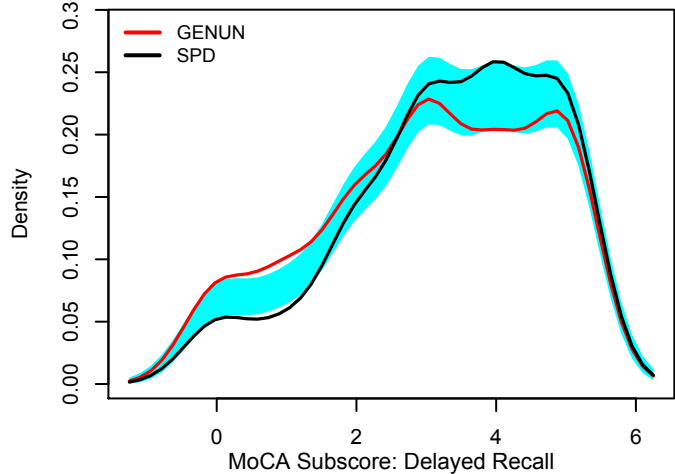
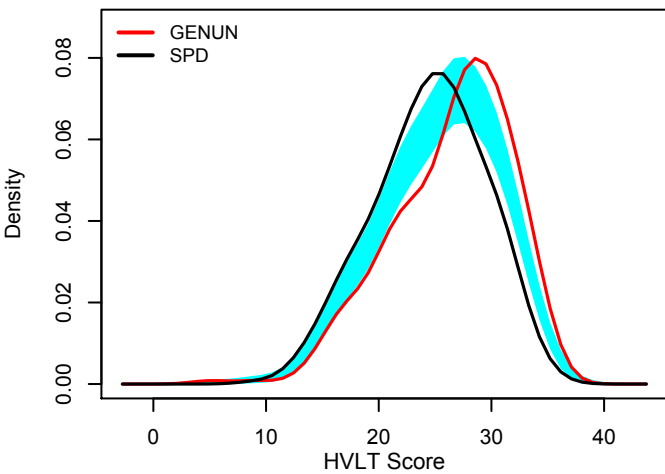
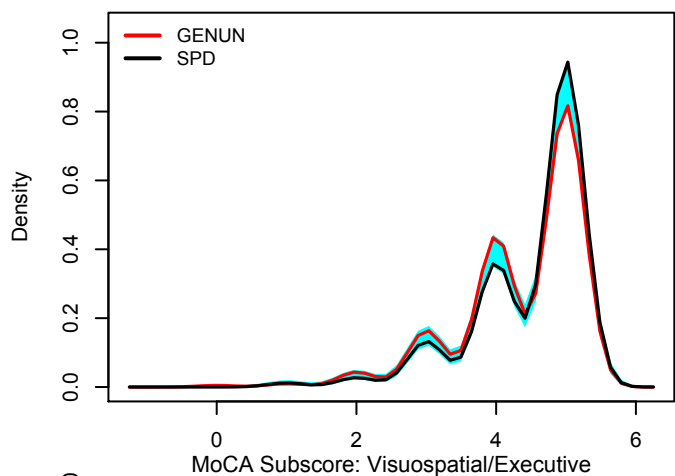
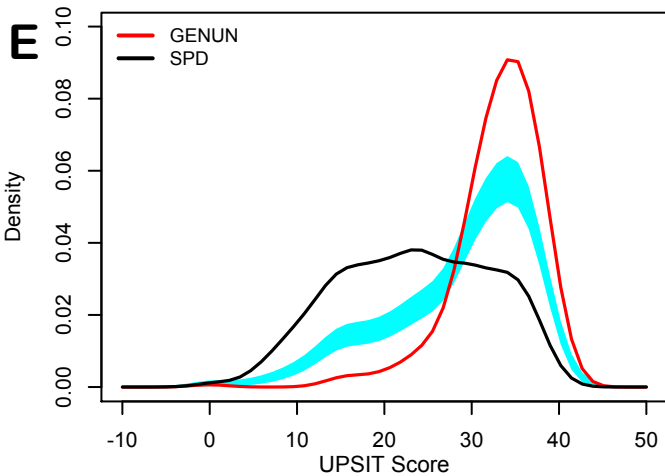
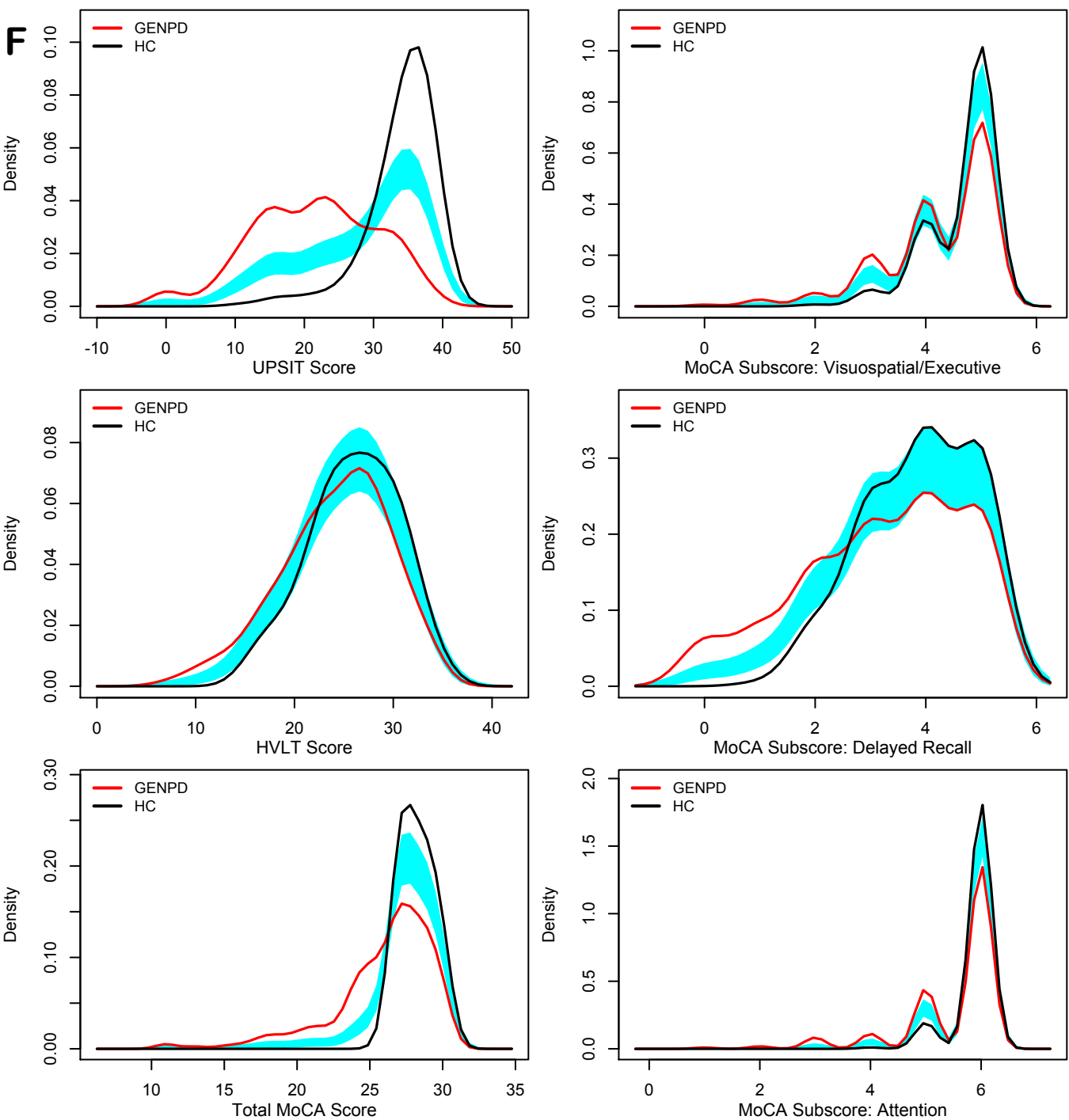


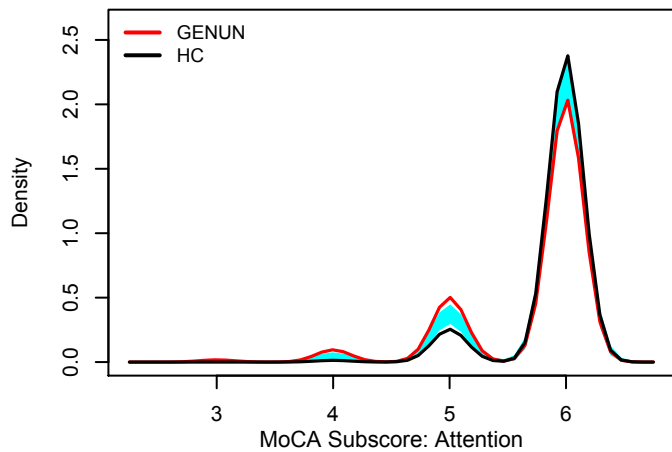
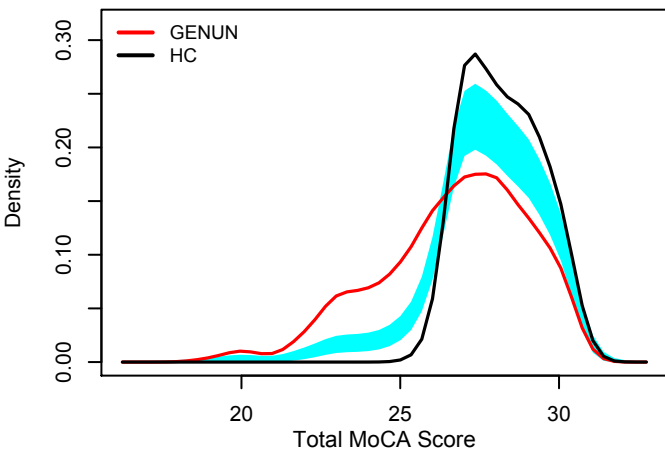
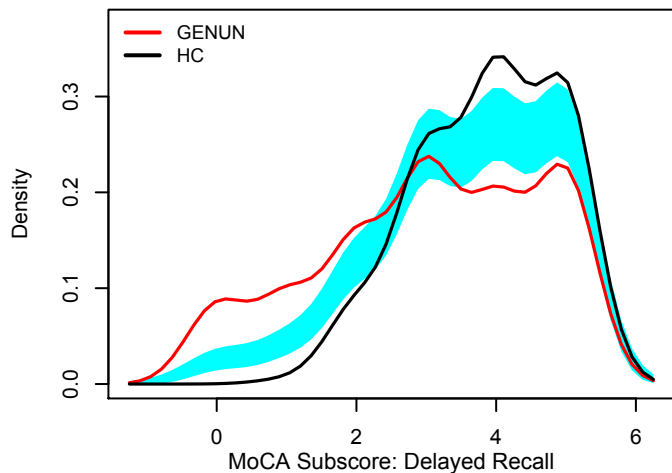
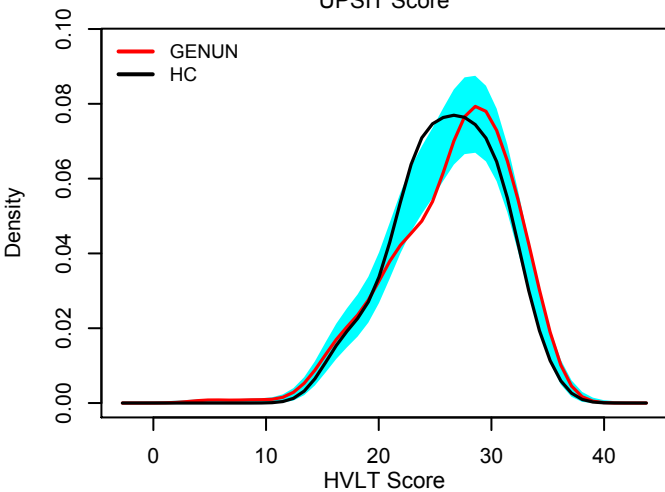
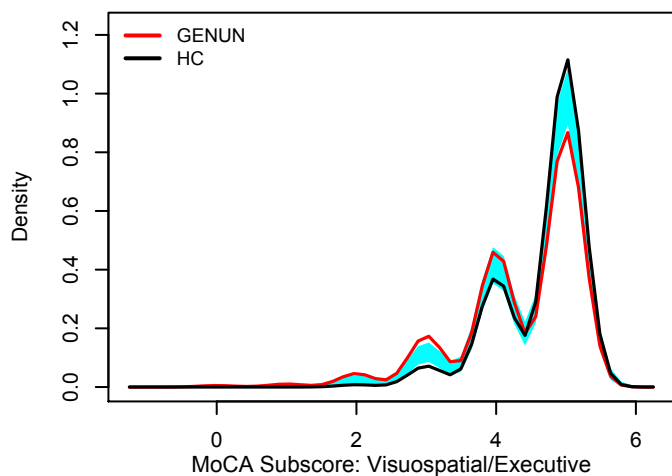
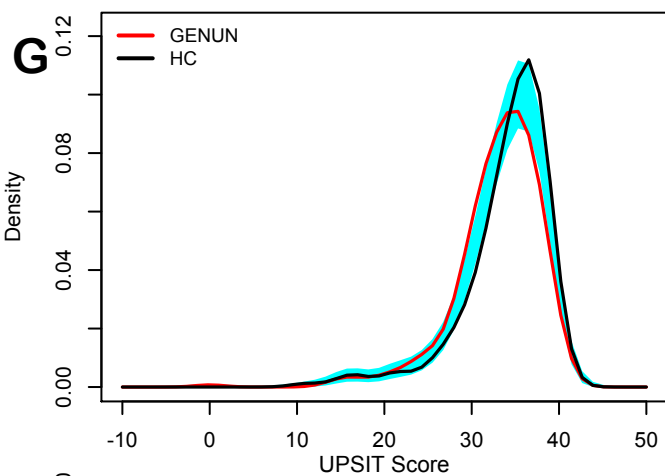
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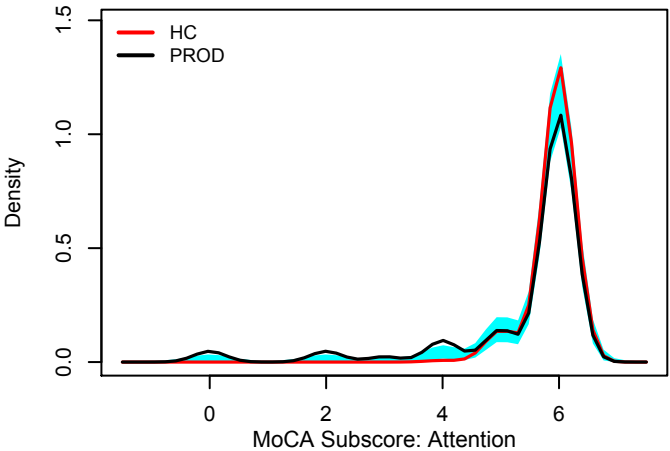
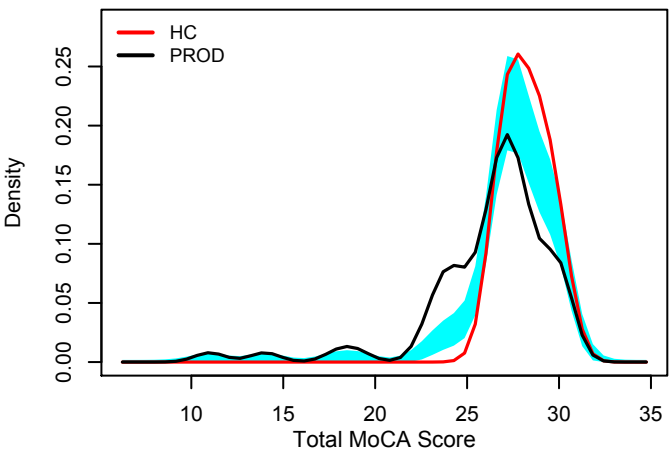
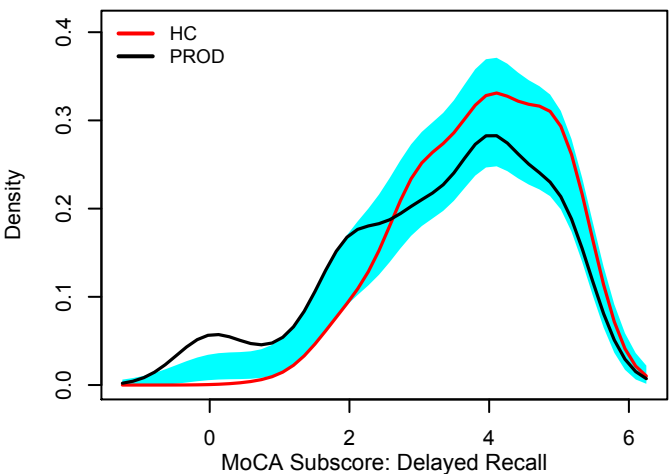
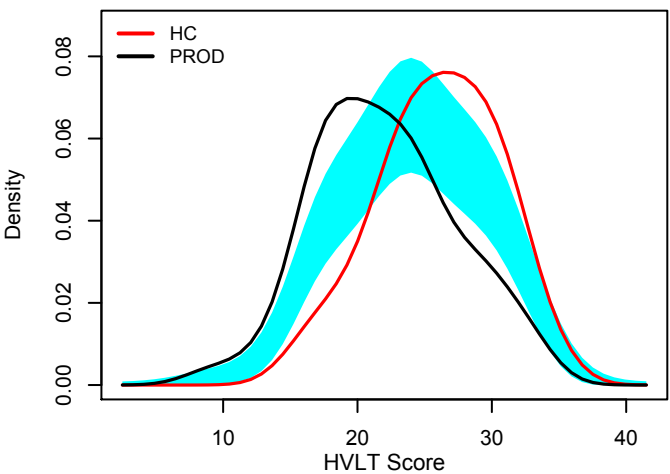
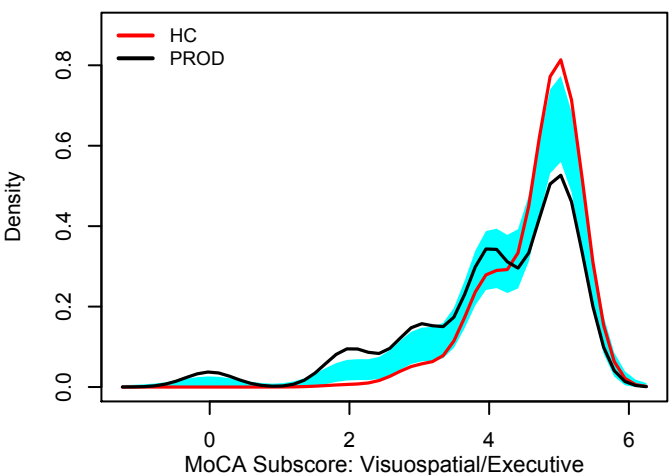
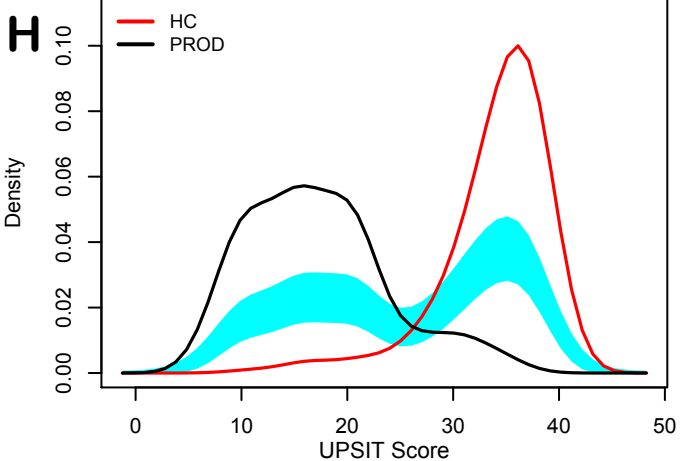
**C**

**D**

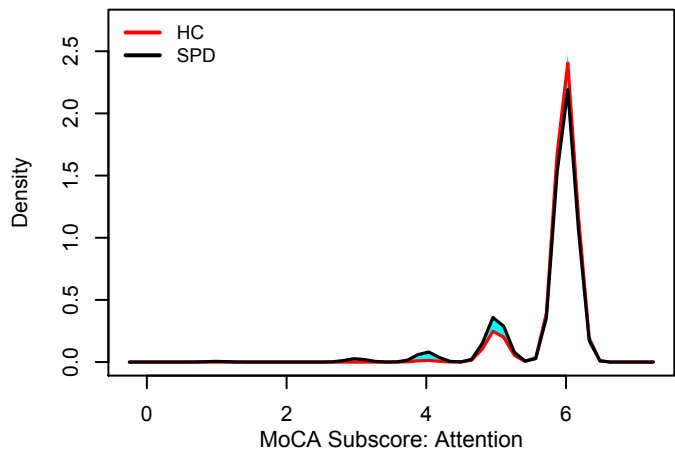
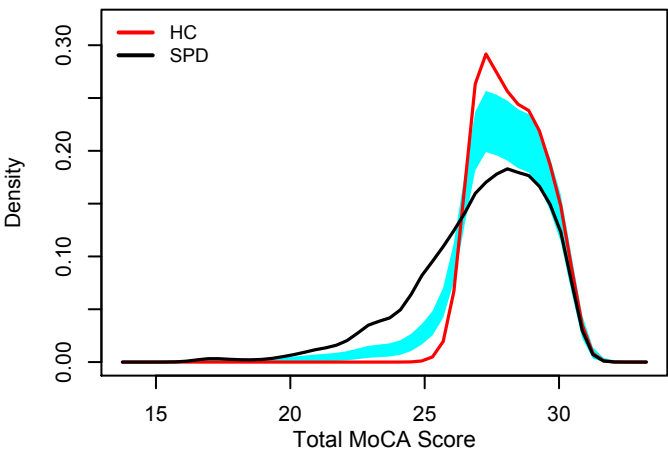
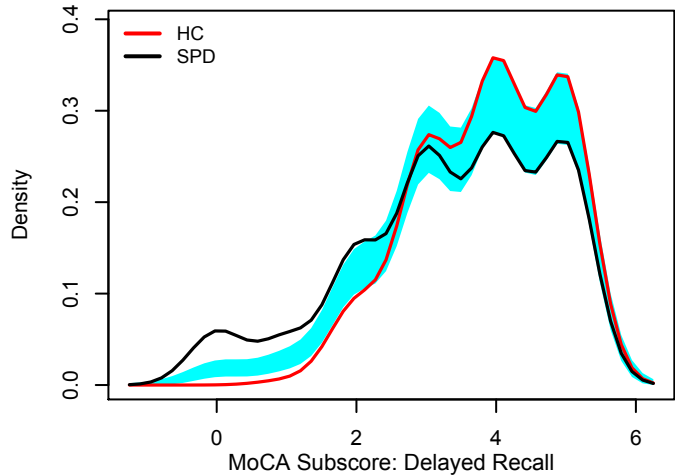
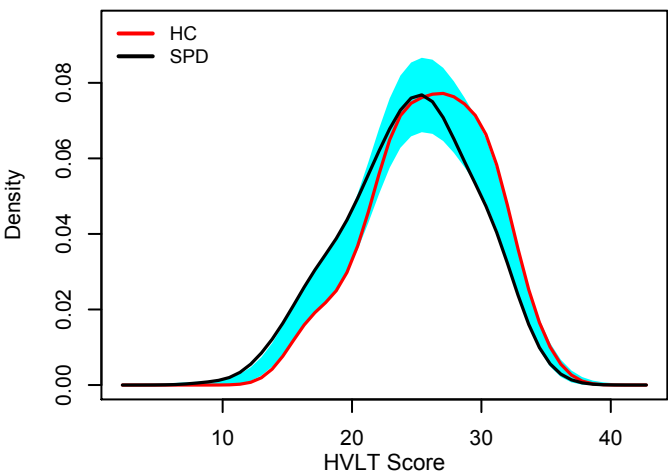
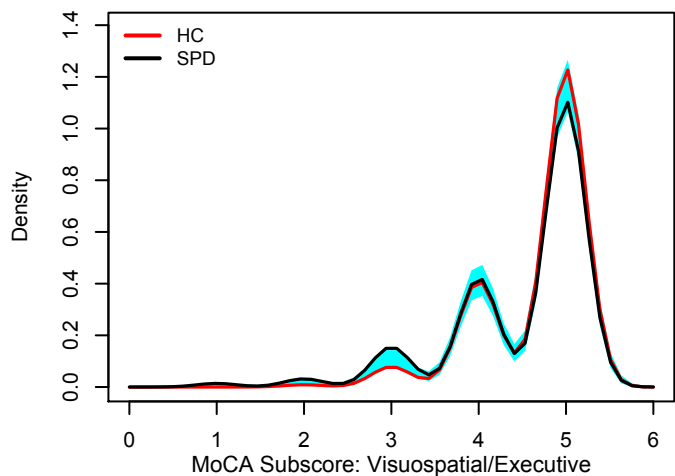
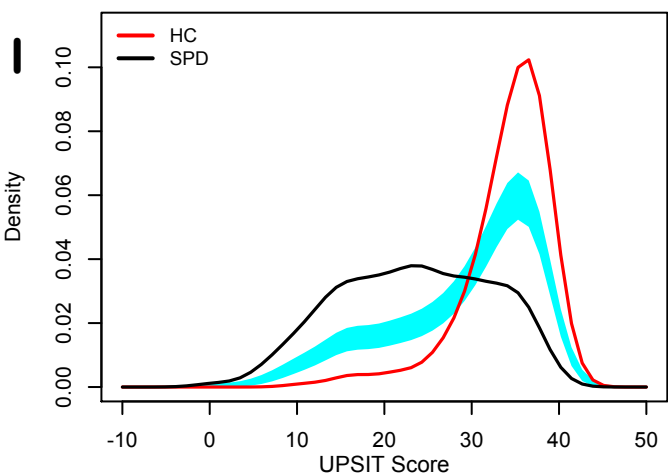


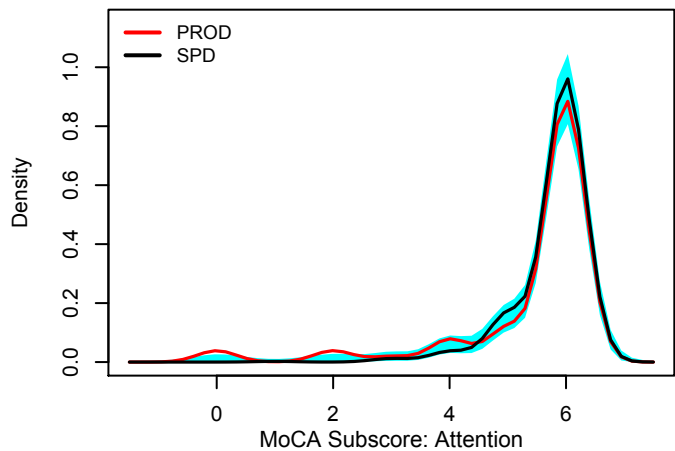
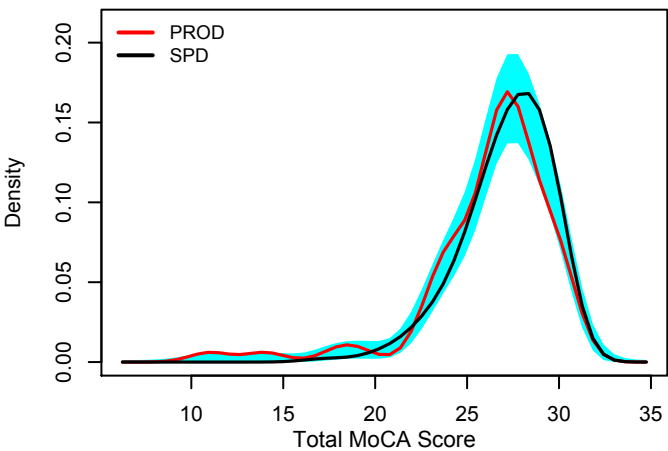
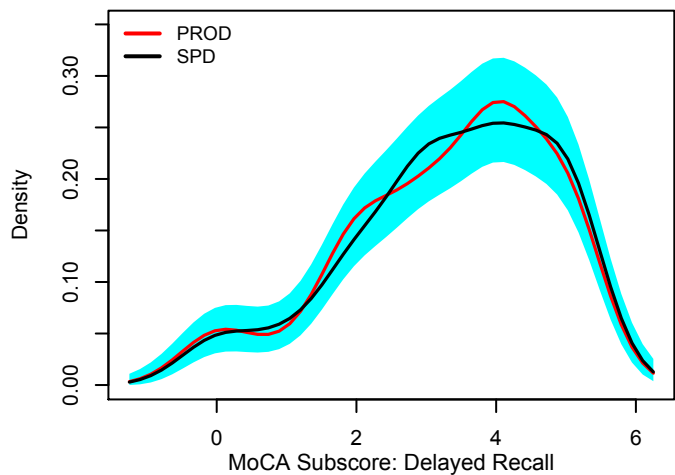
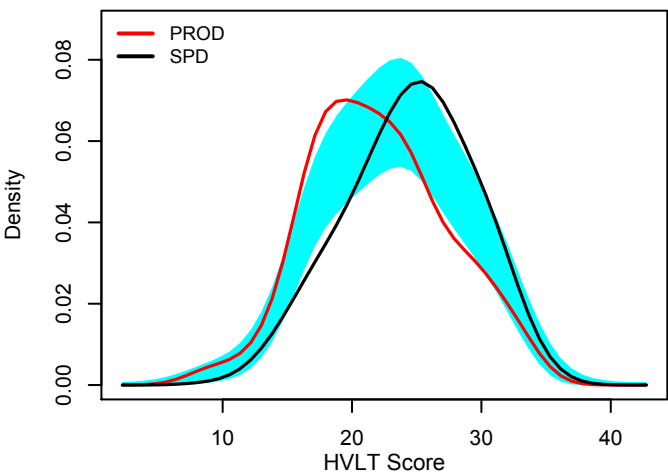
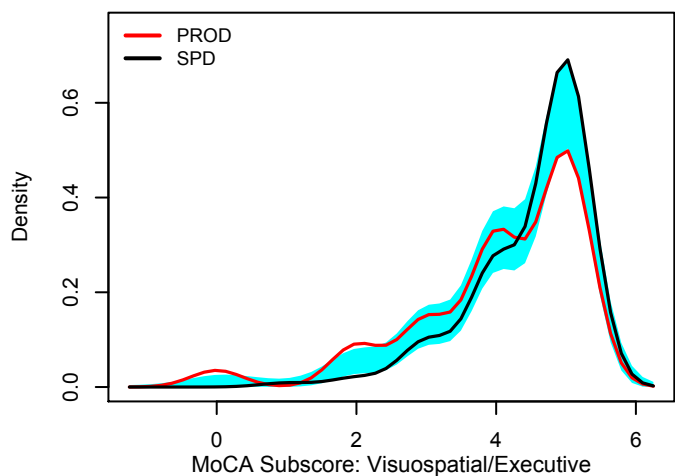
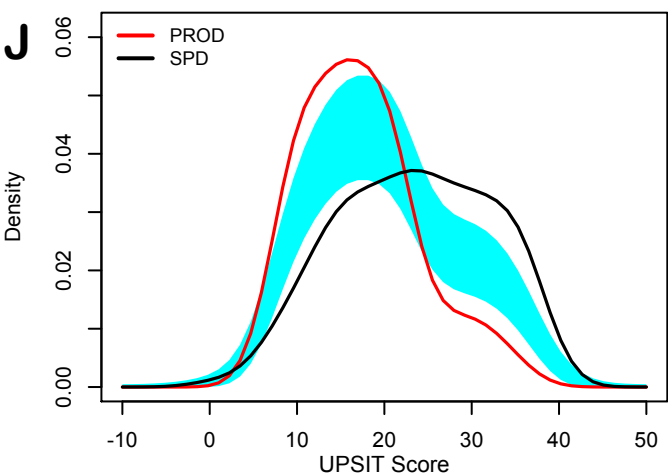
**F**











**Supplemental Figure 2.** Pairwise graphical comparison of univariate density estimates for study variables.

**(A)** GENPD vs. GENUN. **(B)** GENPD vs. PROD. **(C)** GENPD vs. SPD. **(D)** GENUN vs. PROD. **(E)** GENUN vs. SPD. **(F)** HC vs. GENPD. **(G)** HC vs. GENUN. **(H)** HC vs. PROD. **(I)** HC vs. SPD. **(J)** SPD vs. PROD. Each part compares the density distributions of UPSIT scores, HVLIT scores, MoCA scores, and MoCA subscores for Visu-Exec, Delayed-Recall and Attention for the indicated pair of diagnostic categories. The cyan region in each graph identifies a reference band, based on the standard error of the estimate, indicating where the density estimate is likely to lie if the data are normally distributed.

PPMI-defined diagnostic groups: HC = healthy controls; GENUN = asymptomatic individuals having a mutation, or a first-degree relative of an individual having a mutation, in *LRRK2*, *SNCA*, or *GBA*; GENPD = symptomatic individuals having a mutation in *LRRK2*, *SNCA*, or *GBA*; SPD = individuals with sporadic PD at baseline; PROD = Possible-prodromal-PD subjects that have REM-behavior sleep disorder and/or hyposmia.