# Failure to learn a new format in children with developmental dyslexia

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**Supplementary information**

Lists of novel words. The items are listed in alphabetical order; however, in the experiment they were displayed in a random order.

List A (zigzag novel words used at pre-training, training, and post-training):
acato, apate, barta, begia, bicra, cirbo, citro, creto, cuato, cubra, darro, dicca, edofa, erive, fergo, fieso, fonna, fripe, galfe, garto, gimio, gualo, larso, legro, lupre, lurge, miane, mirce, muppa, nupra, odefa, paffo, parpa, pitto, prota, pucca, rigna, rista, scano, sinno, suofi, taddo, tolle, traco, trole, vepra, vesci, virto, zaffo, zudda.

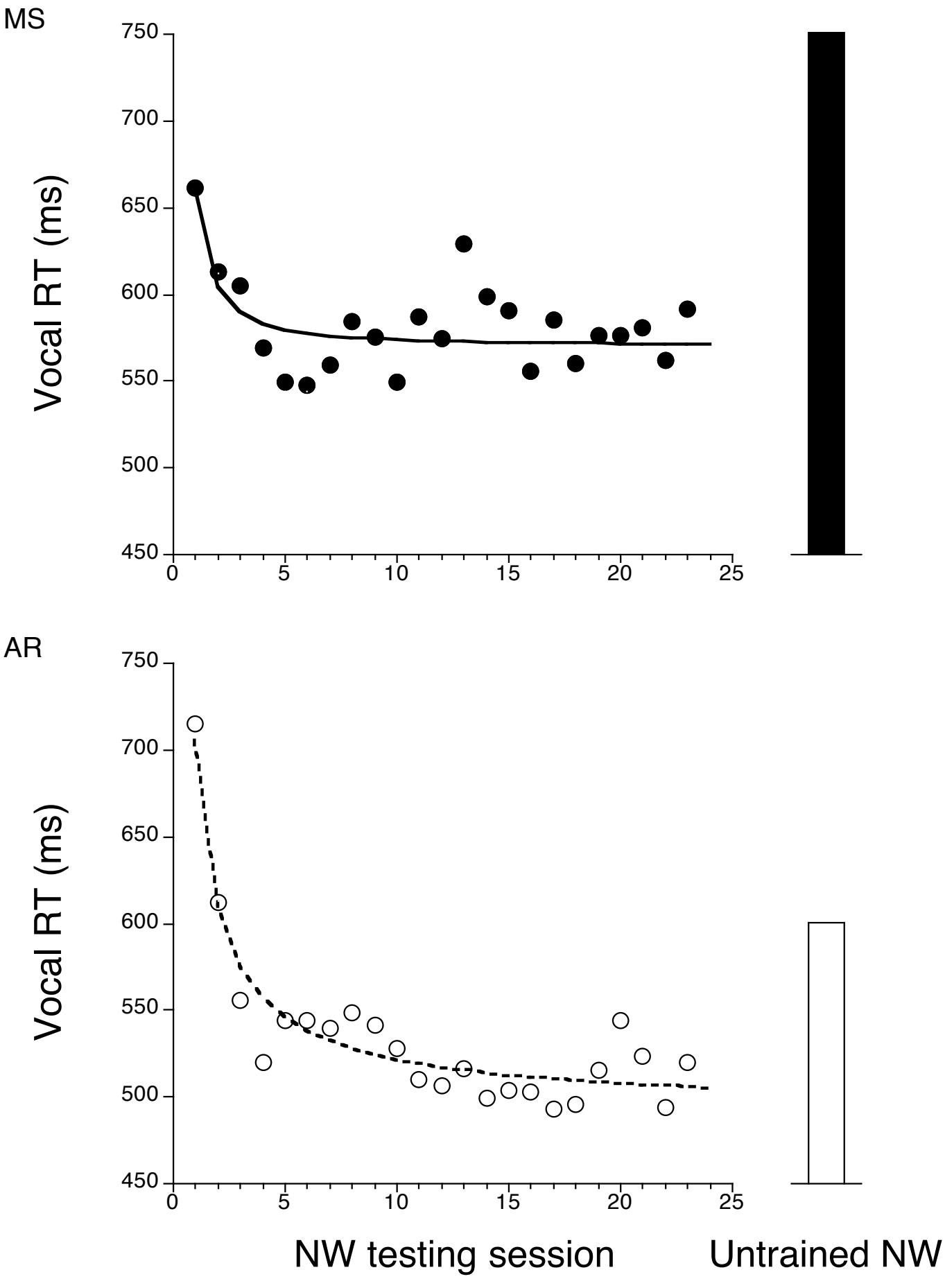
List B (untrained zigzag novel words used at post-training to evaluate the transfer of learning):
acria, asqua, balfa, berro, burba, carfo, cerno, cirto, clame, cospa, dirte, drugi, eleca, etela, fesia, fiema, fiusa, frede, ganna, garva, giafa, gursa, lapro, ledde, lerta, lurro, maffo, marno, molfa, nerna, otare, plena, pelte, piona, pitro, prula, rallo, ricro, scido, sirno, suala, tecco, telga, trane, tusta, vatto, virle, virra, zippe, zoffa.

**Supplementary Figure legends**

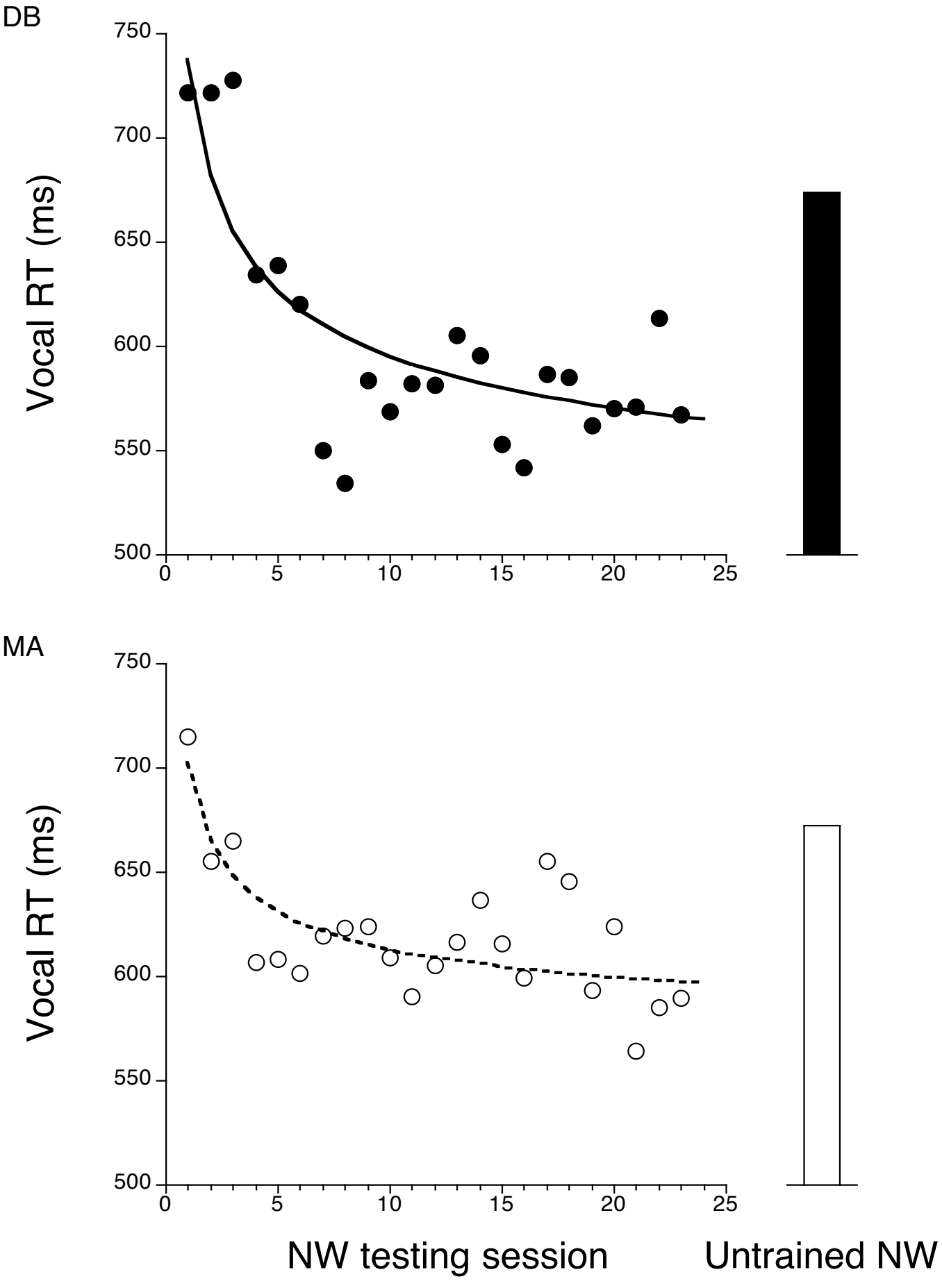
**Supplementary Figures 1-5.** RTs for zigzag novel words (NW) as a function of the number of sessions. Filled symbols and dark bars report data for the dyslexic children; open symbols and white bars report data for the controls. RT data were fit by individual power functions, separately for each child. Equations describing the learning curves for dyslexic children were: MS $y = 92x^{-1.42} + 570$; DB $y = 257x^{-.35} + 480$; AD $y = 135x^{-2.60} + 720$; VG $y = 451x^{-.36} + 470$; MA $y = 379x^{-2.05} + 800$. Equations describing the learning curves for controls were: AR $y = 215x^{-.84} + 490$; MA $y = 142x^{-.43} + 560$; GI $y = 244x^{-.35} + 500$; IA $y = 728x^{-.85} + 440$; LI $y = 767x^{-.32} + 400$.

**Supplementary Figures 6-10.** Accuracy data (percentage of errors) for zigzag novel words (NW) as a function of testing sessions. Filled symbols and dark bars report data for the dyslexic children; open symbols and white bars report data for the controls. Accuracy data were fit by individual power functions. Equations describing the curves for dyslexic children were: MS $y = 20.2x^{-.34} + 0$; DB $y = 12.3x^{-.60} + 0$; AD $y = 15.2x^{-0.40} + 0$; VG $y = 20.2x^{-0.34} + 0$; MA $y = 38.1x^{-.40} + 0$. Equations describing the learning curves for controls were: AR $y = 21.8x^{-0.70} + 0$; MA $y = 22.4x^{-0.80} + 0$; GI $y = 16.1x^{-0.60} + 0$; IA $y = 5.71x^{-0.20} + 0$; LI $y = 21.7x^{-0.40} + 0$. Even with clear individual differences, all children reduced their error rate during training excluding a trade-off interpretation of RT reduction with training.

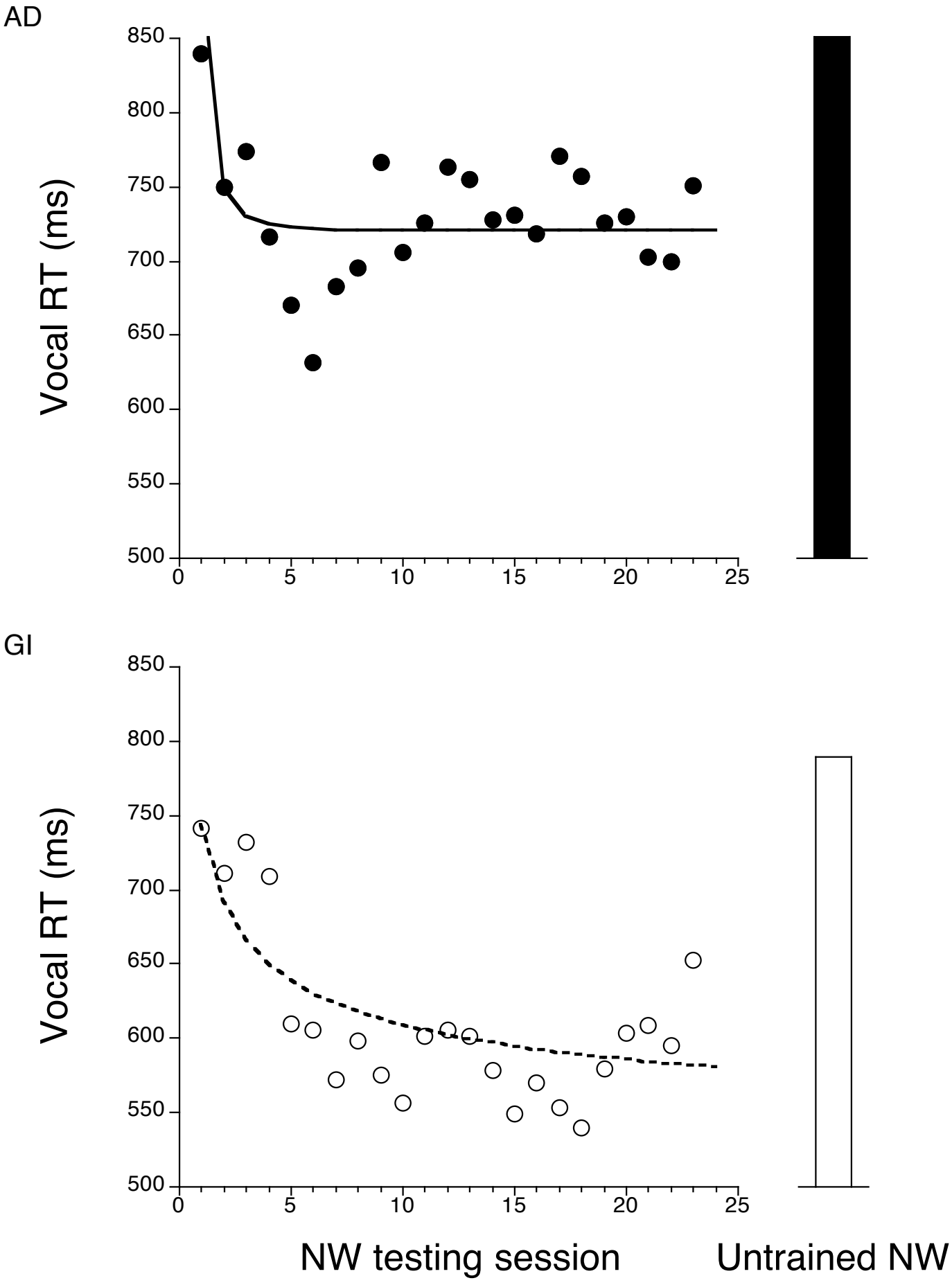
Supplementary Fig. 1



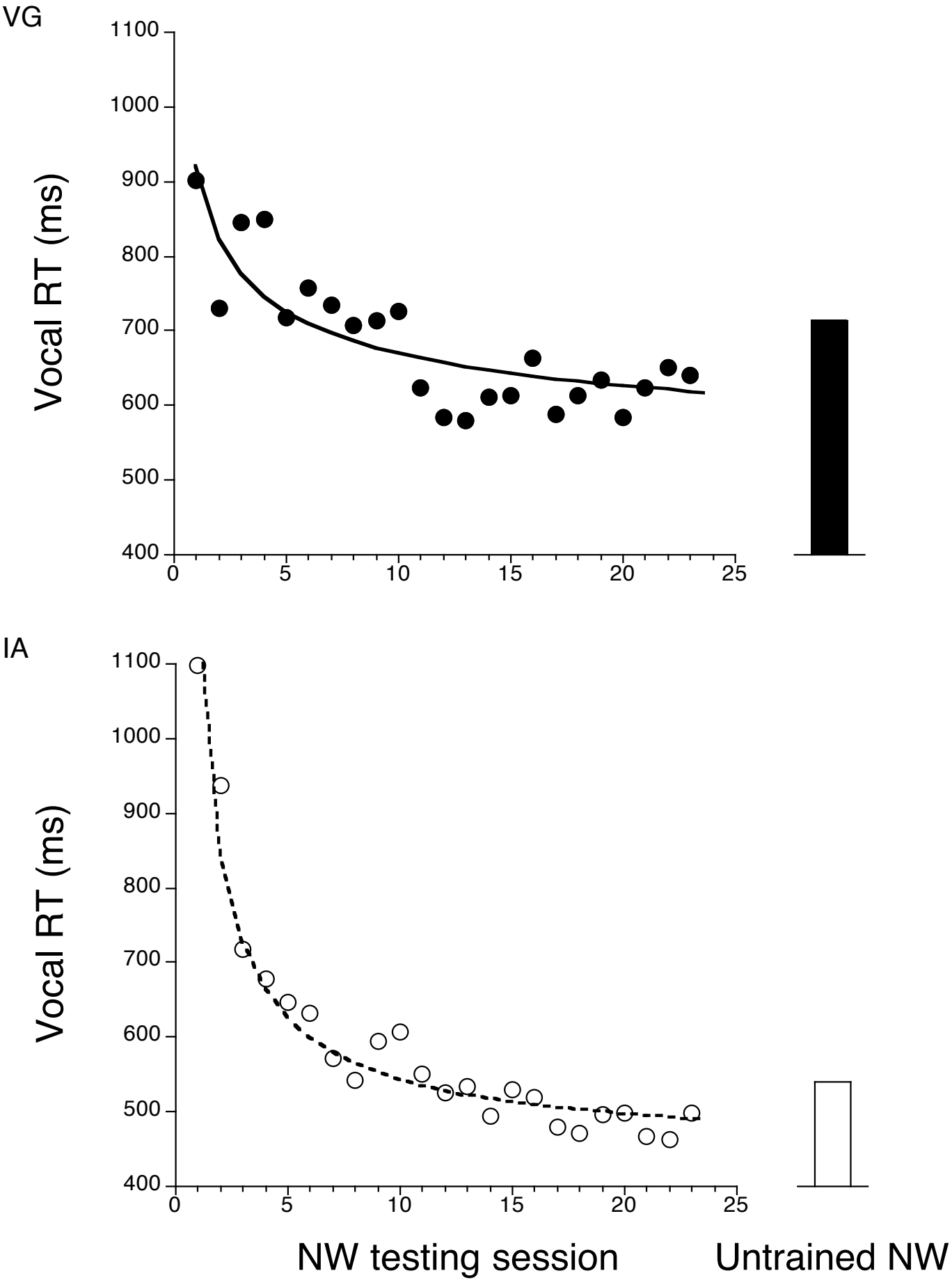
Supplementary Fig. 2



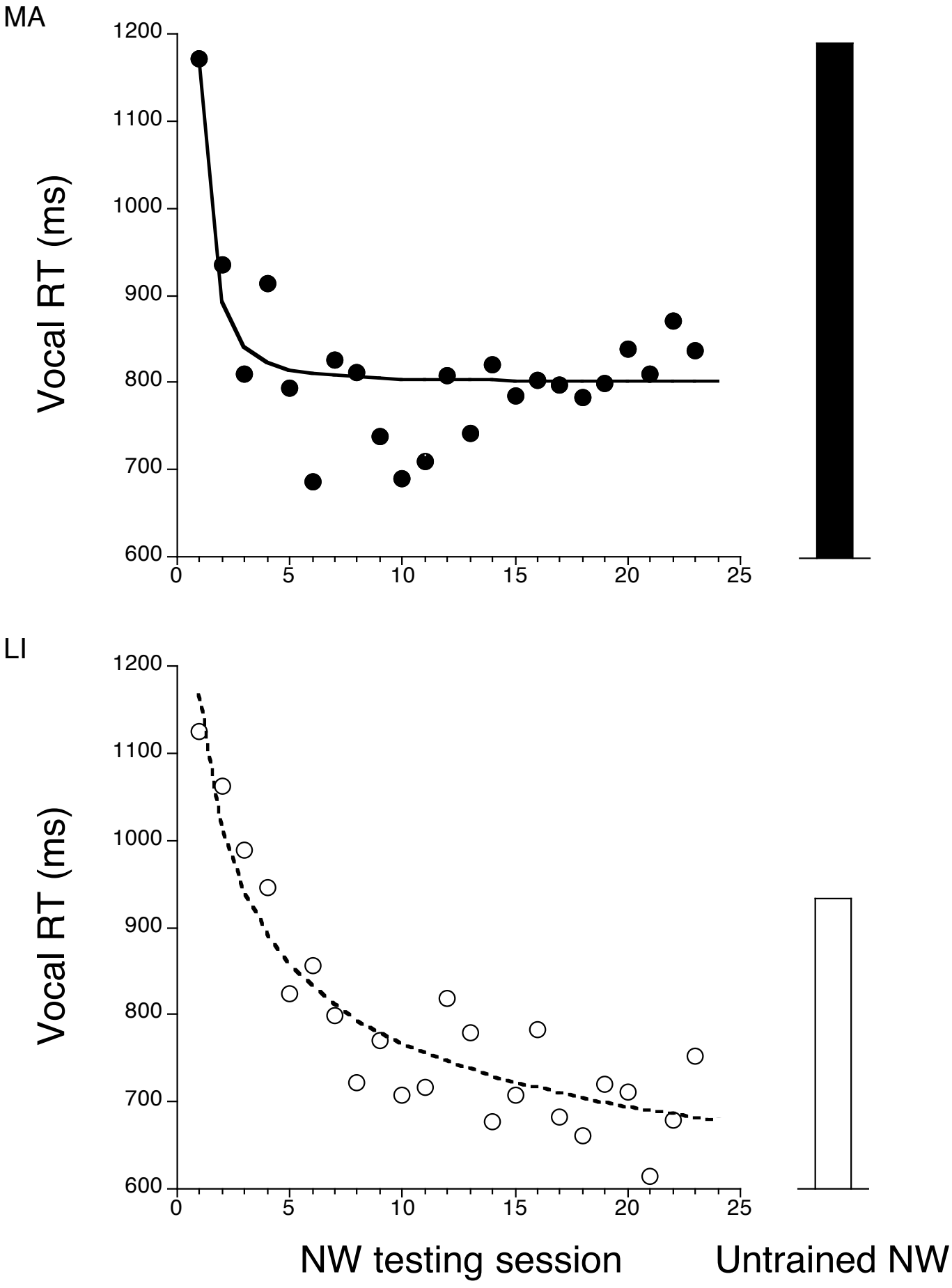
Supplementary Fig. 3



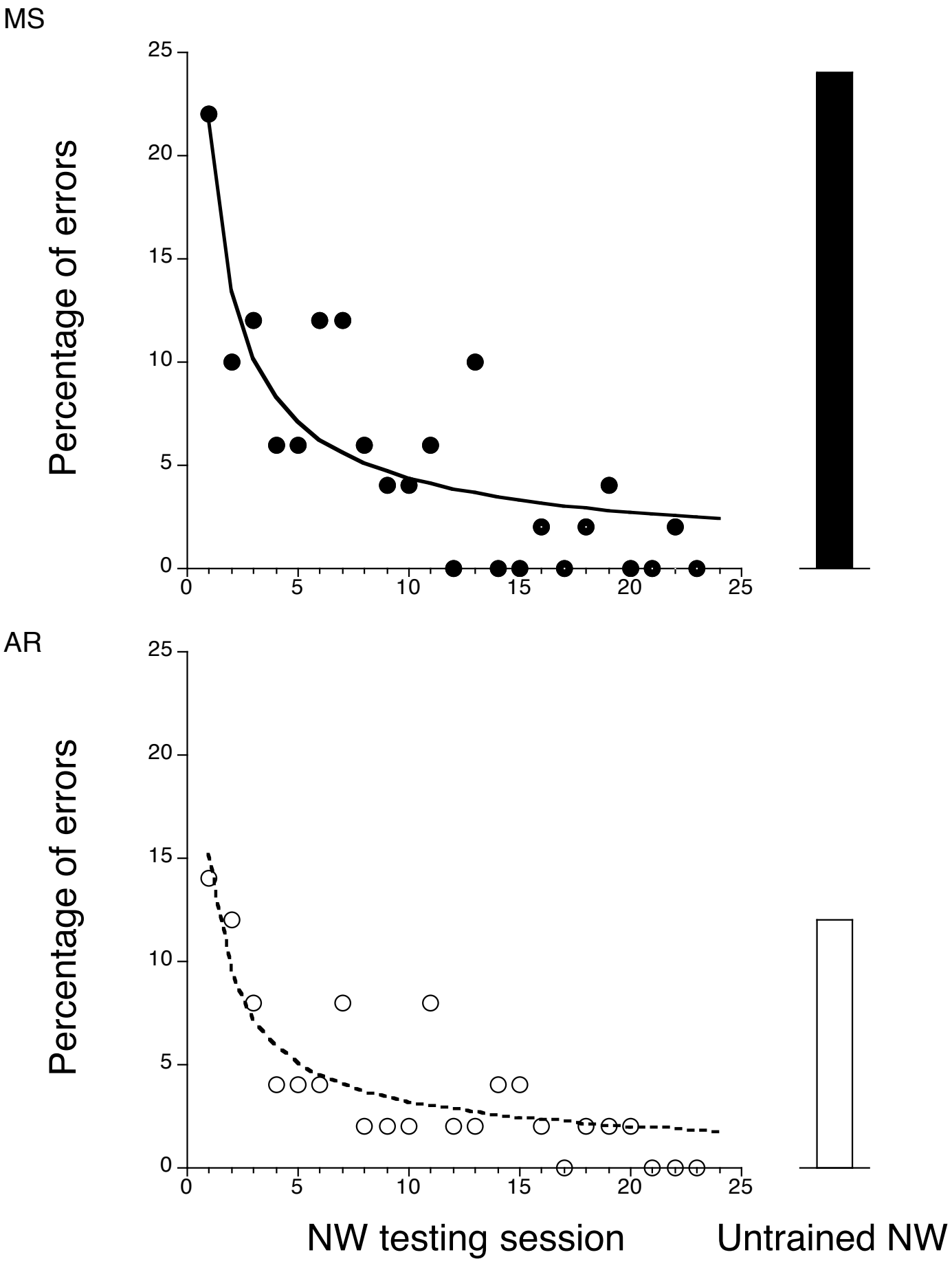
Supplementary Fig. 4



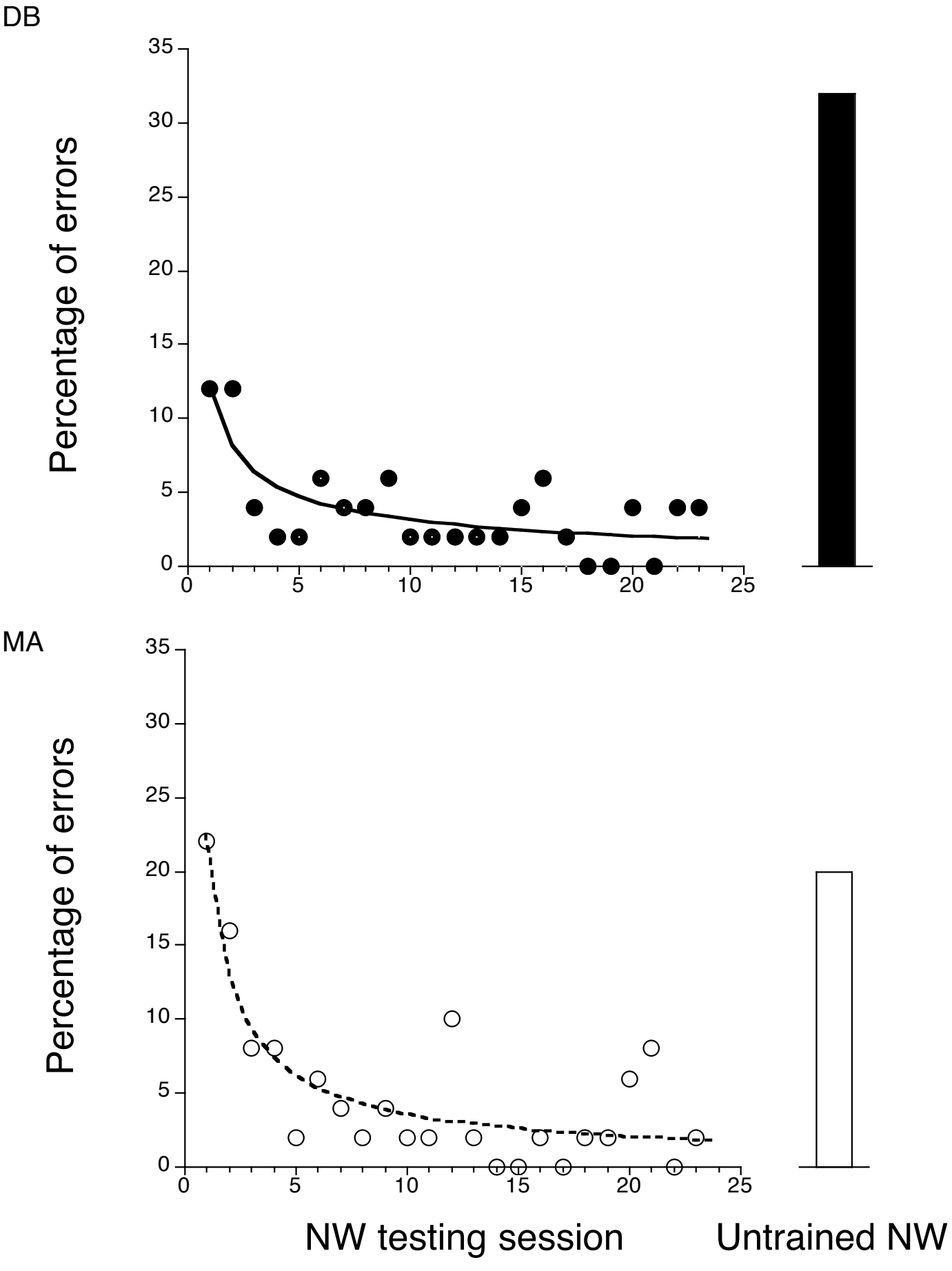
Supplementary Fig. 5



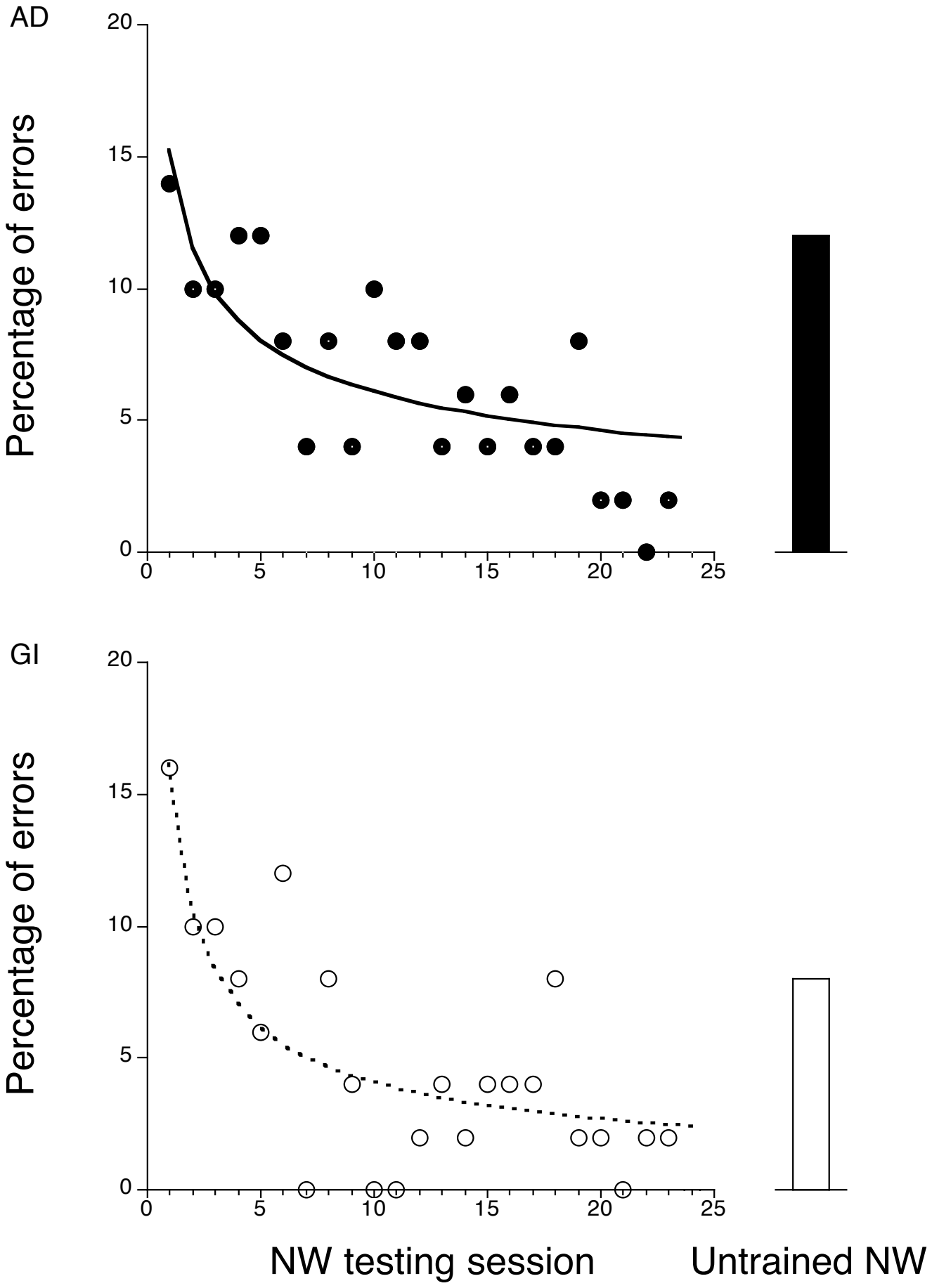
Supplementary Figure 6



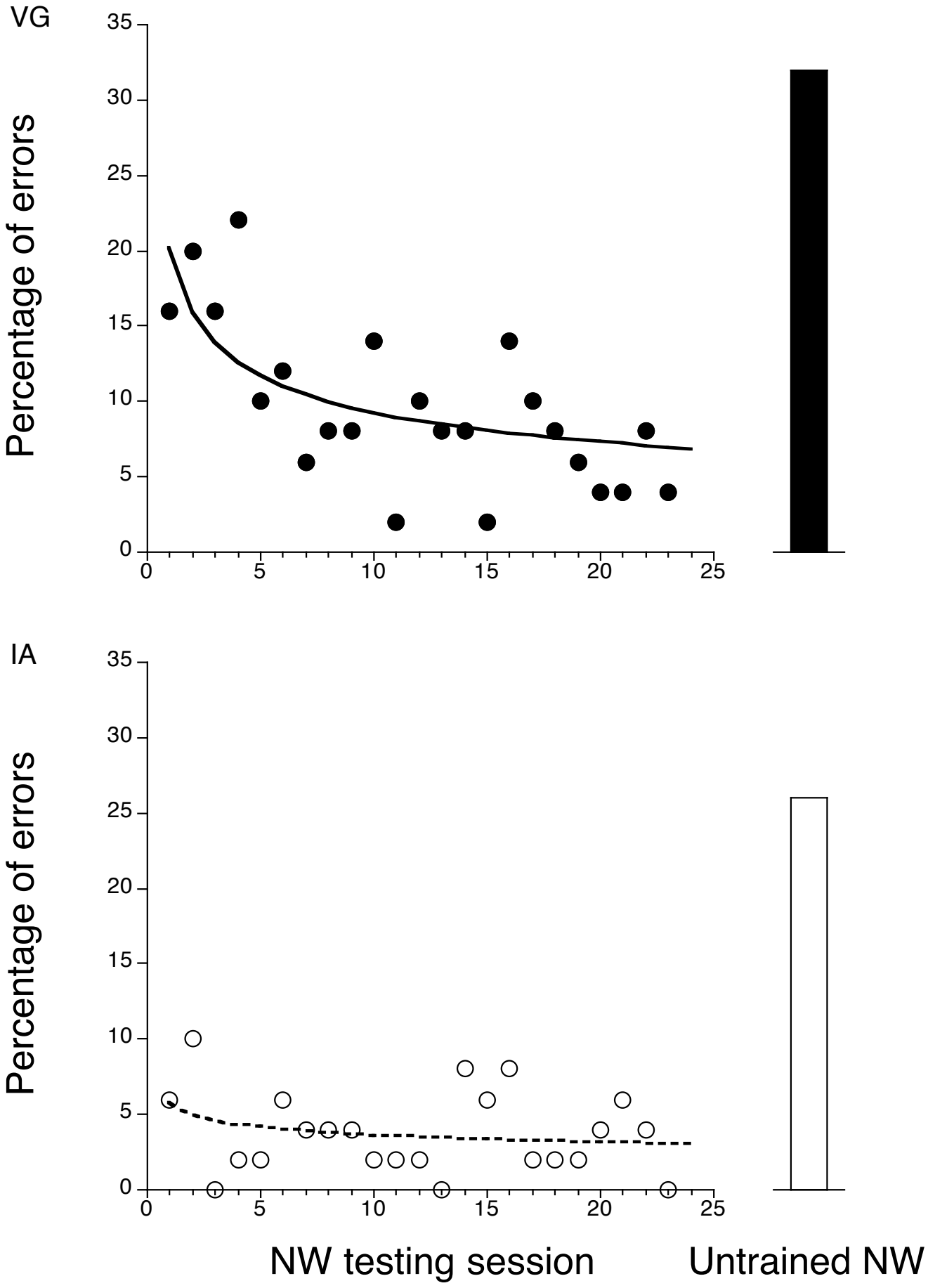
Supplementary Figure 7



Supplementary Figure 8



Supplementary Figure 9



Supplementary Figure 10