

| Figure 1C | Measurement | Age | Genotype | Call1 | Call2 | | | | | | | | | | | | |
|-----------|----------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | | | | | Amb | Ch | Cx | D | F | Har | Ms | R Ch | Sd | Sh | Su | Ts | U |
| Figure 1C | Markov Probabilities | P8 | +/+ | Amb | 0.101703507 | 0.090216914 | 0.054371435 | 0.109537215 | 0.059187803 | 0.139768145 | 0.041335892 | 0.042140451 | 0.048713955 | 0.085687619 | 0.102808841 | 0.060120271 | 0.064407952 |
| | | | | Ch | 0.059244635 | 0.197435655 | 0.061242937 | 0.114140774 | 0.068302287 | 0.106104183 | 0.036124603 | 0.036820588 | 0.038071527 | 0.078075015 | 0.07461444 | 0.05260192 | 0.077221437 |
| | | | | Cx | 0.069885411 | 0.116601253 | 0.085572564 | 0.088650961 | 0.069544762 | 0.092001663 | 0.05959534 | 0.066027702 | 0.061932688 | 0.068332838 | 0.072054048 | 0.064340825 | 0.085459947 |
| | | | | D | 0.062192973 | 0.118857035 | 0.035090892 | 0.183424512 | 0.085104495 | 0.143294847 | 0.024567351 | 0.029834318 | 0.024711437 | 0.09671245 | 0.101258487 | 0.032342514 | 0.062608689 |
| | | | | F | 0.057571976 | 0.102787434 | 0.038702528 | 0.139956492 | 0.104096776 | 0.121282724 | 0.035321663 | 0.042318641 | 0.03619353 | 0.125307012 | 0.093102707 | 0.041945471 | 0.061413045 |
| | | | | Har | 0.062891049 | 0.07429482 | 0.039420776 | 0.094045552 | 0.072825664 | 0.371378926 | 0.027348717 | 0.026298981 | 0.029325492 | 0.082462517 | 0.031743474 | 0.038045029 | 0.049919002 |
| | | | | Ms | 0.07469832 | 0.075429773 | 0.075593977 | 0.077408859 | 0.073130922 | 0.088427785 | 0.077833117 | 0.073130922 | 0.075593977 | 0.075593977 | 0.081946849 | 0.078080601 | 0.073130922 |
| | | | | R Ch | 0.068193873 | 0.088941482 | 0.07571303 | 0.087178078 | 0.076556358 | 0.076404053 | 0.068193873 | 0.075361367 | 0.070492723 | 0.07974013 | 0.074455028 | 0.068193873 | 0.090576134 |
| | | | | Sd | 0.078838703 | 0.075144121 | 0.072176573 | 0.095517613 | 0.076391133 | 0.08124018 | 0.069704877 | 0.072681067 | 0.072003727 | 0.078589156 | 0.073991455 | 0.070361691 | 0.083359703 |
| | | | | Sh | 0.075241843 | 0.085050408 | 0.033871462 | 0.142878618 | 0.093456518 | 0.115674974 | 0.028867278 | 0.029978952 | 0.030465904 | 0.165411021 | 0.084183724 | 0.038291078 | 0.076628221 |
| | | | | Su | 0.074248182 | 0.077642465 | 0.042358557 | 0.110092409 | 0.072181178 | 0.134012648 | 0.035657831 | 0.036931632 | 0.03782776 | 0.09156853 | 0.173403229 | 0.058273819 | 0.05580176 |
| | | | | Ts | 0.077063863 | 0.096927629 | 0.06944149 | 0.088428091 | 0.068990931 | 0.104542355 | 0.061105822 | 0.06217347 | 0.061105822 | 0.072273312 | 0.097819712 | 0.070625293 | 0.069502209 |
| | | | U | 0.060015956 | 0.087199724 | 0.059711773 | 0.09721646 | 0.080854492 | 0.091500087 | 0.045209982 | 0.062635548 | 0.053084937 | 0.095259876 | 0.071444593 | 0.055040905 | 0.140825664 | |
| | | | Dup/+ | Amb | 0.091102285 | 0.056959974 | 0.033746038 | 0.13136032 | 0.074776225 | 0.175046753 | 0.03503636 | 0.035722855 | 0.039070257 | 0.089945927 | 0.153511384 | 0.044451775 | 0.039269847 |
| | | | | Ch | 0.078243635 | 0.130460307 | 0.049126239 | 0.102307018 | 0.073331026 | 0.1319802 | 0.045788599 | 0.048480472 | 0.047870772 | 0.071674902 | 0.119936688 | 0.047970698 | 0.052829444 |
| | | | | Cx | 0.08095641 | 0.083075458 | 0.073475458 | 0.087708791 | 0.073475458 | 0.075432601 | 0.070975458 | 0.070975458 | 0.070975458 | 0.073475458 | 0.090565934 | 0.070975458 | 0.077932601 |
| | | | | D | 0.067062273 | 0.076327277 | 0.02023451 | 0.181975356 | 0.080821623 | 0.180331039 | 0.017581869 | 0.019719059 | 0.021890124 | 0.101737481 | 0.171008558 | 0.024288722 | 0.037022108 |
| | | | | F | 0.056911123 | 0.060936925 | 0.029329584 | 0.176145354 | 0.115232966 | 0.148621871 | 0.029606344 | 0.028990959 | 0.035225927 | 0.109189117 | 0.129506152 | 0.035789446 | 0.044514232 |
| | | | | Har | 0.077046442 | 0.041923071 | 0.018357452 | 0.114108477 | 0.071597405 | 0.456838115 | 0.016928742 | 0.018344633 | 0.02209292 | 0.072101384 | 0.034278082 | 0.021944496 | 0.03443878 |
| | | | | Ms | 0.075194139 | 0.075194139 | 0.077860806 | 0.080908425 | 0.078051282 | 0.080717949 | 0.075194139 | 0.075194139 | 0.075194139 | 0.075194139 | 0.080908425 | 0.075194139 | 0.075194139 |
| | | | | R Ch | 0.07971267 | 0.080716871 | 0.072502586 | 0.08441435 | 0.074855527 | 0.07971267 | 0.072502586 | 0.072502586 | 0.072502586 | 0.076855527 | 0.080216871 | 0.072502586 | 0.081002586 |
| | | | | Sd | 0.073650209 | 0.073584301 | 0.065735795 | 0.092079797 | 0.086674391 | 0.092979038 | 0.065735795 | 0.065735795 | 0.073979038 | 0.08577515 | 0.08293694 | 0.07373129 | 0.067402461 |
| | | | | Sh | 0.064646075 | 0.048588869 | 0.033288449 | 0.140769676 | 0.096259351 | 0.144557806 | 0.02874399 | 0.029389151 | 0.036345158 | 0.150319857 | 0.145371486 | 0.034222485 | 0.047497647 |
| | | | | Su | 0.080457874 | 0.045133566 | 0.021799572 | 0.14377728 | 0.081745228 | 0.168874669 | 0.021096756 | 0.020984029 | 0.025447796 | 0.074254701 | 0.249601683 | 0.029947425 | 0.036879422 |
| | | Ts | | 0.087321441 | 0.068758504 | 0.066758504 | 0.101452813 | 0.071943744 | 0.094250926 | 0.063938293 | 0.066438293 | 0.065019374 | 0.065756475 | 0.101747986 | 0.080675356 | 0.065938293 | |
| | | U | 0.067236713 | 0.069533566 | 0.058621145 | 0.088300306 | 0.095894938 | 0.103872732 | 0.057444675 | 0.061269367 | 0.063892227 | 0.082613278 | 0.093925738 | 0.064465539 | 0.092929777 | | |
| | | P12 | +/+ | Amb | 0.080064866 | 0.078937491 | 0.073599564 | 0.09069767 | 0.064356685 | 0.094012216 | 0.05807866 | 0.060467662 | 0.070346998 | 0.09044944 | 0.082334601 | 0.072644204 | 0.084009941 |
| | | | | Ch | 0.054514286 | 0.114056883 | 0.074916856 | 0.093244915 | 0.093117322 | 0.070434269 | 0.044323117 | 0.046789316 | 0.059682121 | 0.118811015 | 0.069151024 | 0.061871398 | 0.09908748 |
| | | | | Cx | 0.06325708 | 0.097797086 | 0.093766327 | 0.103389752 | 0.071994327 | 0.083006258 | 0.058759751 | 0.059674727 | 0.063024947 | 0.079173853 | 0.062275504 | 0.070578474 | 0.093301913 |
| | | | | D | 0.053289687 | 0.089985043 | 0.047964589 | 0.172024508 | 0.113539967 | 0.062523756 | 0.036736511 | 0.042095456 | 0.049413402 | 0.138879985 | 0.070703941 | 0.045027013 | 0.077816141 |
| | | | | F | 0.0502011 | 0.06940612 | 0.053204508 | 0.117841266 | 0.140430718 | 0.067533567 | 0.040327072 | 0.047438788 | 0.053405749 | 0.129616914 | 0.062011677 | 0.049595331 | 0.11898719 |
| | | | | Har | 0.06832065 | 0.079530289 | 0.061198275 | 0.097340276 | 0.071512589 | 0.154773032 | 0.05044145 | 0.050158405 | 0.06514209 | 0.094251187 | 0.0770542 | 0.055839567 | 0.074437992 |
| | | | | Ms | 0.077132604 | 0.079325205 | 0.074833753 | 0.077296807 | 0.074833753 | 0.086115507 | 0.074833753 | 0.074833753 | 0.074833753 | 0.074833753 | 0.074833753 | 0.081459852 | 0.074833753 |
| | | | | R Ch | 0.072575953 | 0.074895329 | 0.079493031 | 0.075039008 | 0.081665106 | 0.077358384 | 0.070277103 | 0.076373162 | 0.0723055 | 0.08558909 | 0.075203211 | 0.072740157 | 0.086484965 |
| | | | | Sd | 0.076865239 | 0.083934619 | 0.067697382 | 0.089861517 | 0.074544872 | 0.062019624 | 0.057360205 | 0.057850017 | 0.07739663 | 0.09119367 | 0.069875709 | 0.070296308 | 0.121104208 |
| | | | | Sh | 0.043359685 | 0.086347842 | 0.048486402 | 0.152044568 | 0.105973401 | 0.063053374 | 0.029590084 | 0.032101558 | 0.048055495 | 0.188695825 | 0.067972224 | 0.041613146 | 0.092706396 |
| | | | | Su | 0.066994967 | 0.066096639 | 0.0622503 | 0.123774355 | 0.067574286 | 0.082976917 | 0.049439619 | 0.050188002 | 0.057443364 | 0.1141077 | 0.10618911 | 0.063044836 | 0.089919907 |
| | | | | Ts | 0.082360192 | 0.080579039 | 0.080224126 | 0.085774057 | 0.076353031 | 0.085361232 | 0.06137635 | 0.059734314 | 0.069555747 | 0.089368452 | 0.080851576 | 0.072277888 | 0.076183995 |
| | | | U | 0.049099083 | 0.088832109 | 0.054214454 | 0.07570899 | 0.081409094 | 0.065167633 | 0.037978912 | 0.045721309 | 0.07083487 | 0.12494659 | 0.061875375 | 0.053291744 | 0.190919836 | |
| | | | Dup/+ | Amb | 0.098766621 | 0.078379227 | 0.051535625 | 0.11519861 | 0.061439745 | 0.12628985 | 0.042640127 | 0.039733059 | 0.059038792 | 0.07041587 | 0.136475414 | 0.068648202 | 0.051438859 |
| | | | | Ch | 0.068239989 | 0.16283615 | 0.053893565 | 0.102048958 | 0.067321187 | 0.111387924 | 0.037313548 | 0.033949215 | 0.04859484 | 0.080893835 | 0.081978156 | 0.074994729 | 0.076547905 |
| | | | | Cx | 0.069305511 | 0.109663952 | 0.076318161 | 0.102687473 | 0.071021961 | 0.09131016 | 0.058408204 | 0.056808204 | 0.069514025 | 0.069048897 | 0.075528774 | 0.070773765 | 0.079610912 |
| | | | | D | 0.064673398 | 0.100710191 | 0.038116475 | 0.162468581 | 0.085503982 | 0.13104751 | 0.028300475 | 0.023302014 | 0.04886016 | 0.09064298 | 0.127670712 | 0.048760846 | 0.049942676 |
| | | | | F | 0.06337049 | 0.079343574 | 0.045044888 | 0.137290221 | 0.110054736 | 0.105655106 | 0.039273774 | 0.03881166 | 0.054016389 | 0.099485642 | 0.104747466 | 0.059079715 | 0.063826339 |
| | | | | Har | 0.061052209 | 0.067230144 | 0.033620476 | 0.089224841 | 0.057076001 | 0.312128909 | 0.033948795 | 0.026659516 | 0.048418315 | 0.074581354 | 0.097500279 | 0.05239378 | 0.046165381 |
| | | | | Ms | 0.078182646 | 0.074256689 | 0.068673122 | 0.085485821 | 0.068224943 | 0.095212161 | 0.072378385 | 0.066320181 | 0.068986848 | 0.079794258 | 0.0821678 | 0.093996966 | 0.066320181 |
| | | | | R Ch | 0.073992674 | 0.079326007 | 0.076659341 | 0.085040293 | 0.073992674 | 0.079516484 | 0.073992674 | 0.073992674 | 0.073992674 | 0.079326007 | 0.076659341 | 0.073992674 | 0.079516484 |
| | | | | Sd | 0.079013263 | 0.08229203 | 0.053482781 | 0.126804547 | 0.058557732 | 0.096409682 | 0.04862908 | 0.046555445 | 0.098090132 | 0.086974101 | 0.082503 | 0.078743153 | 0.061945054 |
| Sh | 0.055760179 | | | 0.073303997 | 0.036620315 | 0.162209699 | 0.083754839 | 0.101989521 | 0.029175045 | 0.032781249 | 0.073161179 | 0.115712384 | 0.113162548 | 0.064712596 | 0.057656447 | | |
| Su | 0.076365154 | | | 0.068484046 | 0.035456501 | 0.134619464 | 0.063098355 | 0.165536387 | 0.027304668 | 0.025175115 | 0.053672264 | 0.075356118 | 0.172412884 | 0.056524964 | 0.04599408 | | |
| Ts | 0.070788891 | 0.099807693 | | 0.060648374 | 0.103635725 | 0.064018604 | 0.120940896 | 0.051592841 | 0.046365298 | 0.065123554 | 0.066814322 | 0.094393497 | 0.082229414 | 0.07364089 | | | |
| U | 0.063563201 | 0.090037706 | 0.059177663 | 0.077848464 | 0.080819375 | 0.095039034 | 0.052308068 | 0.046048808 | 0.078892659 | 0.0764327 | | | | | | | |

| | test | # of samples | Measurement | Session | Genotype | Average | s.e.m. | Shapiro-Wilk Statistic | d.f. | p value | Levene's Test of Equality of Error Variances | F | d.f. | p value | Group comparison | F or T | d.f. | p value | Non parametric | Total N | U | Exact Sig. (2-sided) | |
|-----------|--------------------|--------------|---------------------------------------|---------|----------|-------------|-------------|------------------------|-------------|-------------|--|-------------|-------------|-------------|--------------------|--------------------|-------------|---------|----------------|---------------------|----|----------------------|-------|
| Figure 3A | Social Interaction | +/- = 29 | Active Affiliative Social Interaction | | 1 +/- | 20.44827586 | 2.462820186 | 0.858865315 | 29 | 0.00116356 | | 0.207909295 | 1, 52 | 0.650309642 | Linear Mixed Model | Genotype | 4.548222132 | 1, 52 | 0.037694079 | Mann-Whitney U Test | 54 | 295 | 0.241 |
| | | | | | Dup/+ | 16.12 | 2.118427089 | 0.919489664 | 25 | 0.049880996 | | | | | | Session | 6.63206726 | 1, 52 | 0.012899426 | | | | |
| | | | | | | 2 +/- | 16.10344828 | 2.191196463 | 0.830220758 | 29 | 0.000306004 | | 6.068565225 | 1, 52 | 0.017106795 | Genotype * Session | 0.083082118 | 1, 52 | 0.774309083 | Mann-Whitney U Test | 54 | 271 | 0.112 |
| | | | | | | Dup/+ | 10.68 | 1.170071223 | 0.968846464 | 25 | 0.615970065 | | | | | | | | | | | | |

| | test | # of samples | Measurement | Call/Sequence/Treatment | Genotype | Average | s.e.m. | Shapiro-Wilk Statistic | d.f. | p value | p_adj(BH FDR) | Rejects(FDR 5%) | Levene's Test of Equality of Error Variances | F | d.f. | p value | p_adj(BH FDR) | Rejects(FDR 5%) | Non parametric | Total N | U | Exact Sig. (2-sided) | p_adj(BH FDR) | Rejects(FDR 5%) | | | | | | | | | | | |
|-----------|-----------------|------------------------|-------------|-------------------------|-------------|-------------|-------------|------------------------|-------------|-------------|---------------|-----------------|--|----|-------------|-------------|---------------|-----------------|----------------|---------------------|----|----------------------|---------------|-----------------|------|-------------|-------|-------------|-------------|-------|----|-----|-------------|-------------|-------|
| Figure 3B | PFC qPCR Ratios | +/- = 29 Dup/+ = 25 | | | Cyfp1 | +/+ | 1 | 0.030565721 | 0.967887825 | 29 | 0.503911143 | 0.615891398 | FALSE | | 0.077969713 | 1, 52 | 0.781175481 | 0.781175481 | FALSE | Mann-Whitney U Test | 54 | 223 | 0.015520717 | 0.017072789 | TRUE | | | | | | | | | | |
| | | | | | Dup/+ | 0.884575918 | 0.0350217 | 0.935282311 | 25 | 0.115138402 | 0.230276804 | FALSE | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | Herc2 | +/+ | 1 | 0.036862052 | 0.910243349 | 29 | 0.017383737 | 0.058346907 | FALSE | | | | | | | | | | | | | 5.147086939 | 1, 52 | 0.02746385 | 0.043157478 | TRUE | 54 | 634 | 2.47859E-06 | 3.02939E-06 | TRUE |
| | | | | | Dup/+ | 1.450171921 | 0.069649187 | 0.929411192 | 25 | 0.084231065 | 0.208898227 | FALSE | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | Gabr γ3 | +/+ | 1 | 0.035711165 | 0.961010535 | 29 | 0.348044938 | 0.510465908 | FALSE | | | | | | | | | | | | | 6.115122111 | 1, 52 | 0.016709163 | 0.030633465 | TRUE | 54 | 680 | 3.63193E-08 | 6.65854E-08 | TRUE |
| | | | | | Dup/+ | 1.576577905 | 0.089142915 | 0.844462327 | 25 | 0.001385113 | 0.015236241 | TRUE | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | Gabr α5 | +/+ | 1 | 0.030077099 | 0.965415615 | 29 | 0.443054479 | 0.573364619 | FALSE | | | | | | | | | | | | | 2.261895439 | 1, 52 | 0.138641516 | 0.169450742 | FALSE | 54 | 701 | 4.30116E-09 | 9.46255E-09 | TRUE |
| | | | | | Dup/+ | 1.448050518 | 0.043521111 | 0.940979346 | 25 | 0.155942394 | 0.28589439 | FALSE | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | Gabr β3 | +/+ | 1 | 0.028467867 | 0.892847601 | 29 | 0.006632384 | 0.029182489 | TRUE | | | | | | | | | | | | | 6.397332165 | 1, 52 | 0.014500159 | 0.030633465 | TRUE | 54 | 712 | 1.33607E-09 | 3.67419E-09 | TRUE |
| | | | | | Dup/+ | 1.483918438 | 0.043551948 | 0.900236264 | 25 | 0.018564925 | 0.058346907 | FALSE | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | Atp10a | +/+ | 1 | 0.038524899 | 0.985510817 | 29 | 0.950721941 | 0.950721941 | FALSE | | | | | | | | | | | | | 3.600502413 | 1, 52 | 0.063320774 | 0.087066065 | FALSE | 54 | 639 | 1.61364E-06 | 2.21876E-06 | TRUE |
| | | | | | Dup/+ | 1.429887064 | 0.064250518 | 0.95368803 | 25 | 0.303076393 | 0.476262904 | FALSE | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | Ube3a | +/+ | 1 | 0.0338655 | 0.952634736 | 29 | 0.214142651 | 0.362395256 | FALSE | | | | | | | | | | | | | 1.204414172 | 1, 52 | 0.277497274 | 0.305247001 | FALSE | 54 | 415 | 0.362426672 | 0.362426672 | FALSE |
| | | | | | Dup/+ | 1.039138082 | 0.031949969 | 0.979763106 | 25 | 0.880370616 | 0.922293026 | FALSE | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | Snrpn | +/+ | 1 | 0.026754314 | 0.980325866 | 29 | 0.846303415 | 0.922293026 | FALSE | | | | | | | | | | | | | 12.1968643 | 1, 52 | 0.000985848 | 0.005422164 | TRUE | 54 | 724 | 3.58345E-10 | 3.67419E-09 | TRUE |
| | | | | | Dup/+ | 1.965066302 | 0.06641545 | 0.973491971 | 25 | 0.73402039 | 0.849918346 | FALSE | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | Ndn | +/+ | 1 | 0.047116062 | 0.825070461 | 29 | 0.000243417 | 0.005355172 | TRUE | | | | | | | | | | | | | 8.444920144 | 1, 52 | 0.005366846 | 0.014758828 | TRUE | 54 | 714 | 1.0761E-09 | 3.67419E-09 | TRUE |
| | | | | | Dup/+ | 2.135987884 | 0.068416932 | 0.930826846 | 25 | 0.09081578 | 0.208898227 | FALSE | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | Magel2 | +/+ | 1 | 0.094775004 | 0.873272267 | 29 | 0.002380391 | 0.017456201 | TRUE | | | | | | | | | | | | | 9.410756264 | 1, 52 | 0.00342098 | 0.012543592 | TRUE | 54 | 676 | 5.3736E-08 | 8.44422E-08 | TRUE |
| | | | | | Dup/+ | 2.311850494 | 0.164516745 | 0.958246081 | 25 | 0.380649786 | 0.523393456 | FALSE | | | | | | | | | | | | | | | | | | | | | | | |
| Mkrn3 | +/+ | 1 | 0.070663209 | 0.882491508 | 29 | 0.003827231 | 0.021049771 | TRUE | 14.29308031 | 1, 52 | 0.00040491 | 0.004454013 | TRUE | 54 | 717 | 7.76117E-10 | 3.67419E-09 | TRUE | | | | | | | | | | | | | | | | | |
| Dup/+ | 2.963637925 | 0.20077082 | 0.93166415 | 25 | 0.094953739 | 0.208898227 | FALSE | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | Session | Genotype | # of samples | Call/Call 1 of Sequence/Gene (PFC) | Call 2 | Measurement | Test | R | p_value |
|----------------|---------|--------------------|--------------|------------------------------------|--------|--------------------|-----------------------------------|---------|---------|
| Figure 4 Lasso | SI1 | +/+ | 28 | F | Ch | Percentage | Pearson's Correlation Coefficient | 0.683 | 0.00006 |
| | | | | U | Amb | Percentage | | 0.652 | 0.00017 |
| | | Dup/+ | 25 | Har | D | Number | | 0.610 | 0.00120 |
| | | | | F | Sd | Number | | 0.521 | 0.00751 |
| | SI2 | +/+ | 28 | Ts | Sd | Number | -0.303 | 0.11762 | |
| | | | | Cx | Amb | Number | -0.374 | 0.04977 | |
| | | | | Su | Su | Percentage | 0.590 | 0.00095 | |
| | | | | Su | Ch | Percentage | -0.333 | 0.08323 | |
| | | | | Ts | Sd | Percentage | -0.289 | 0.13645 | |
| | | | | Cx | Amb | Percentage | -0.383 | 0.04454 | |
| | | | | Sd | D | Percentage | -0.334 | 0.08205 | |
| | | | | D | Ts | Percentage | -0.272 | 0.16192 | |
| | | | | Sh | Sh | Percentage | 0.407 | 0.03163 | |
| | | | | Sh | F | Percentage | 0.534 | 0.00340 | |
| | | | | U | D | Percentage | 0.527 | 0.00393 | |
| | | | | Sd | Har | Markov Probability | 0.421 | 0.02572 | |
| | | | | Sd | Ts | Markov Probability | 0.412 | 0.02934 | |
| Amb | Ts | Markov Probability | 0.423 | 0.02506 | | | | | |
| Dup/+ | 25 | Sd | Sd | Number | 0.506 | 0.00991 | | | |
| | | D | Sd | Number | 0.561 | 0.00352 | | | |
| | | Ms | Ts | Markov Probability | 0.437 | 0.02910 | | | |
| | | Herc2 | | | -0.391 | 0.05358 | | | |
| | | Magel2 | | | -0.519 | 0.00783 | | | |

| Test | # of samples | Measurement | Age | Call types | Genotype | Average | s.e.m. | Shapiro-Wilk Statistic | d.f. | p value | Levene's Test of Equality of Error Variances | F | d.f. | p value | Non parametric | Total N | U | Exact Sig. (2-sided) | p_adj(BH FDR) | Rejects(FDR 5%) |
|-----------------|-------------------------|------------------------|-------------|-------------|----------|-------------|-------------|------------------------|-------|---------------------|--|-------|-------|---------------------|----------------|---------|-------|----------------------|---------------|-----------------|
| Figure S2 | Single Call Percentages | +/- = 29 Dup/+ = 25 | P8 | Harmonic | +/+ | 17.45309499 | 2.374386479 | 0.910330752 | 29 | 0.017470304 | 0.039 | 1, 52 | 0.844 | Mann-Whitney U Test | 54 | 482 | 0.038 | 0.073125 | FALSE | |
| | | | | | Dup/+ | 23.99262989 | 2.51320553 | 0.968445861 | 25 | 0.605956004 | | | | | | | | | | |
| | | | | Step Up | +/+ | 9.469954539 | 1.576908127 | 0.886326461 | 29 | 0.004681862 | 0.014 | 1, 52 | 0.906 | Mann-Whitney U Test | 54 | 544 | 0.002 | 0.013 | TRUE | |
| | | | | | Dup/+ | 17.63019761 | 1.83898474 | 0.965303976 | 25 | 0.529794816 | | | | | | | | | | |
| | | | | Two Steps | +/+ | 1.72485928 | 0.499060336 | 0.700696551 | 29 | 2.1526E-06 | 5.731 | 1, 52 | 0.02 | Mann-Whitney U Test | 54 | 370.5 | 0.888 | 0.923 | FALSE | |
| | | | | | Dup/+ | 1.124349081 | 0.293975811 | 0.762639765 | 25 | 5.75745E-05 | | | | | | | | | | |
| | | | | Complex | +/+ | 2.116166558 | 0.511228085 | 0.758387236 | 29 | 1.63166E-05 | 27.785 | 1, 52 | 0 | Mann-Whitney U Test | 54 | 233 | 0.021 | 0.073125 | FALSE | |
| | | | | | Dup/+ | 0.305938531 | 0.084055485 | 0.711510436 | 25 | 1.04515E-05 | | | | | | | | | | |
| | | | | Step Down | +/+ | 0.699405679 | 0.104070659 | 0.924381045 | 29 | 0.039424294 | 6.738 | 1, 52 | 0.012 | Mann-Whitney U Test | 54 | 357 | 0.923 | 0.923 | FALSE | |
| | | | | | Dup/+ | 0.979627002 | 0.264373649 | 0.738636892 | 25 | 2.52657E-05 | | | | | | | | | | |
| | | | | Mult Steps | +/+ | 0.17380499 | 0.060508779 | 0.604567307 | 29 | 1.16566E-07 | 3.745 | 1, 52 | 0.058 | Mann-Whitney U Test | 54 | 318 | 0.357 | 0.460909091 | FALSE | |
| | | | | | Dup/+ | 0.082292764 | 0.03036862 | 0.610018419 | 25 | 5.54504E-07 | | | | | | | | | | |
| | | | | Downward | +/+ | 16.53365922 | 1.454583372 | 0.93191503 | 29 | 0.061675978 | 0.001 | 1, 52 | 0.977 | Mann-Whitney U Test | 54 | 457 | 0.101 | 0.145888889 | FALSE | |
| | | | | | Dup/+ | 19.4966709 | 1.573631172 | 0.903839858 | 25 | 0.022261879 | | | | | | | | | | |
| | | | | Chevron | +/+ | 12.8029498 | 2.336002368 | 0.848803348 | 29 | 0.000718645 | 11.411 | 1, 52 | 0.001 | Mann-Whitney U Test | 54 | 247 | 0.045 | 0.073125 | FALSE | |
| | | | | | Dup/+ | 5.943266006 | 1.216295861 | 0.823222108 | 25 | 0.000569316 | | | | | | | | | | |
| | | | | Short | +/+ | 16.57837581 | 1.982143736 | 0.888200469 | 29 | 0.005170978 | 1.631 | 1, 52 | 0.207 | Mann-Whitney U Test | 54 | 244.5 | 0.041 | 0.073125 | FALSE | |
| | | | | | Dup/+ | 11.33112305 | 1.528463601 | 0.899748651 | 25 | 0.018116602 | | | | | | | | | | |
| | | | | Flat | +/+ | 8.908464811 | 0.894681369 | 0.937732518 | 29 | 0.087460213 | 0.487 | 1, 52 | 0.488 | Mann-Whitney U Test | 54 | 412 | 0.39 | 0.460909091 | FALSE | |
| | | | | | Dup/+ | 9.661835285 | 0.898782763 | 0.934447971 | 25 | 0.110130938 | | | | | | | | | | |
| Upward | +/+ | 7.395449245 | 1.138464179 | 0.860490579 | 29 | 0.001259456 | 4.877 | 1, 52 | 0.032 | Mann-Whitney U Test | 54 | 159.5 | 0 | 0 | TRUE | | | | | |
| | Dup/+ | 2.92732317 | 0.837114567 | 0.637454671 | 25 | 1.16704E-06 | | | | | | | | | | | | | | |
| Reverse Chevron | +/+ | 1.068158519 | 0.247135772 | 0.79791404 | 29 | 7.66502E-05 | 14.268 | 1, 52 | 0 | Mann-Whitney U Test | 54 | 235.5 | 0.023 | 0.073125 | FALSE | | | | | |
| | Dup/+ | 0.349636446 | 0.114490483 | 0.673570616 | 25 | 3.2783E-06 | | | | | | | | | | | | | | |
| Ambiguous | +/+ | 5.075656552 | 0.517267693 | 0.920748051 | 29 | 0.031853167 | 2.7 | 1, 52 | 0.106 | Mann-Whitney U Test | 54 | 488 | 0.029 | 0.073125 | FALSE | | | | | |
| | Dup/+ | 6.17511027 | 0.355630426 | 0.979787426 | 25 | 0.880860569 | | | | | | | | | | | | | | |
| | | +/- = 28 Dup/+ = 25 | P12 | Harmonic | +/+ | 6.277179301 | 1.221399182 | 0.856562514 | 28 | 0.001271849 | 8.711 | 1, 51 | 0.005 | Mann-Whitney U Test | 53 | 529.5 | 0.001 | 0.001857143 | TRUE | |
| | | | | | Dup/+ | 15.94044379 | 2.58363418 | 0.86654837 | 25 | 0.003691306 | | | | | | | | | | |
| | | | | Step Up | +/+ | 5.449123558 | 0.534269097 | 0.96559614 | 28 | 0.468670576 | 8.516 | 1, 51 | 0.008 | Mann-Whitney U Test | 53 | 611 | 0 | 0 | TRUE | |
| | | | | | Dup/+ | 12.04519299 | 0.983435748 | 0.952879427 | 25 | 0.290831539 | | | | | | | | | | |
| | | | | Two Steps | +/+ | 2.161399241 | 0.431376082 | 0.833052609 | 28 | 0.000433318 | 4.114 | 1, 51 | 0.048 | Mann-Whitney U Test | 53 | 488.5 | 0.013 | 0.021125 | TRUE | |
| | | | | | Dup/+ | 4.220561371 | 0.708178653 | 0.894156422 | 25 | 0.013717722 | | | | | | | | | | |
| | | | | Complex | +/+ | 3.225566046 | 0.628320233 | 0.833917517 | 28 | 0.000450263 | 4.219 | 1, 51 | 0.045 | Mann-Whitney U Test | 53 | 279.5 | 0.208 | 0.2704 | FALSE | |
| | | | | | Dup/+ | 1.99112209 | 0.382515852 | 0.885270538 | 25 | 0.008892563 | | | | | | | | | | |
| | | | | Step Down | +/+ | 3.579840671 | 0.570832128 | 0.697949684 | 28 | 2.66568E-06 | 4.453 | 1, 51 | 0.04 | Mann-Whitney U Test | 53 | 389.5 | 0.482 | 0.482 | FALSE | |
| | | | | | Dup/+ | 4.823223225 | 0.881276174 | 0.836195773 | 25 | 0.000974136 | | | | | | | | | | |
| | | | | Mult Steps | +/+ | 0.127422145 | 0.05251269 | 0.539278539 | 28 | 2.97073E-08 | 6.224 | 1, 51 | 0.016 | Mann-Whitney U Test | 53 | 518 | 0.001 | 0.001857143 | TRUE | |
| | | | | | Dup/+ | 0.494635335 | 0.099147419 | 0.872071789 | 25 | 0.004761788 | | | | | | | | | | |
| | | | | Downward | +/+ | 14.56735575 | 1.389759578 | 0.977066055 | 28 | 0.775281977 | 1.024 | 1, 51 | 0.316 | Mann-Whitney U Test | 53 | 414 | 0.254 | 0.300181818 | FALSE | |
| | | | | | Dup/+ | 16.66741941 | 1.259111946 | 0.978214073 | 25 | 0.847569453 | | | | | | | | | | |
| | | | | Chevron | +/+ | 8.506344836 | 1.253108206 | 0.931457541 | 28 | 0.067099718 | 1.73 | 1, 51 | 0.194 | Mann-Whitney U Test | 53 | 398 | 0.392 | 0.424666667 | FALSE | |
| | | | | | Dup/+ | 11.09202531 | 1.772335055 | 0.908933739 | 25 | 0.028857066 | | | | | | | | | | |
| | | | | Short | +/+ | 24.67237434 | 1.902693762 | 0.976006277 | 28 | 0.746446416 | 1.448 | 1, 51 | 0.234 | Mann-Whitney U Test | 53 | 104 | 0 | 0 | TRUE | |
| | | | | | Dup/+ | 12.17459737 | 1.462148021 | 0.897067218 | 25 | 0.015846561 | | | | | | | | | | |
| | | | | Flat | +/+ | 11.19643262 | 1.055433918 | 0.988795598 | 28 | 0.987163835 | 0.751 | 1, 51 | 0.39 | Mann-Whitney U Test | 53 | 260.5 | 0.111 | 0.160333333 | FALSE | |
| | | | | | Dup/+ | 9.194884849 | 1.195630488 | 0.847740082 | 25 | 0.001596047 | | | | | | | | | | |
| Upward | +/+ | 16.2187462 | 1.347636513 | 0.971416339 | 28 | 0.619040455 | 2.838 | 1, 51 | 0.098 | Mann-Whitney U Test | 53 | 77 | 0 | 0 | TRUE | | | | | |
| | Dup/+ | 6.254786952 | 0.964544814 | 0.898523799 | 25 | 0.017039931 | | | | | | | | | | | | | | |
| Reverse Chevron | +/+ | 1.438409391 | 0.587525621 | 0.412880321 | 28 | 1.61273E-09 | 4.443 | 1, 51 | 0.04 | Mann-Whitney U Test | 53 | 153 | 0 | 0 | TRUE | | | | | |
| | Dup/+ | 0.209169478 | 0.073839381 | 0.630593712 | 25 | 9.65877E-07 | | | | | | | | | | | | | | |
| Ambiguous | +/+ | 2.579805905 | 0.509613613 | 0.84438254 | 28 | 0.000721538 | 0.383 | 1, 51 | 0.539 | Mann-Whitney U Test | 53 | 531 | 0.001 | 0.001857143 | TRUE | | | | | |
| | Dup/+ | 4.891937833 | 0.542355543 | 0.959949647 | 25 | 0.413473007 | | | | | | | | | | | | | | |

| | Measurement | Age | Genotype | # of samples | Average | s.e.m | test | D (Statistic) | p_value |
|-----------|--------------------|-----|----------|--------------|-------------|-------------|-------------------------|---------------|---------|
| Figure S4 | Intercall Interval | P8 | +/+ | 10904 | 718.8055075 | 25.51921498 | Kolmogorov Smirnov test | 0.475880411 | <0.001 |
| | | | Dup/+ | 10383 | 659.1470108 | 23.14787095 | | 0.437253202 | <0.001 |
| | | P12 | +/+ | 6508 | 1144.13212 | 56.70251624 | Kolmogorov Smirnov test | 0.523816841 | <0.001 |
| | | | Dup/+ | 10541 | 659.7266547 | 22.0062769 | | 0.432217057 | <0.001 |

| | Test | # of samples | Age | Call/Sequence/Treatment | Genotype | Average | s.e.m. | Shapiro-Wilk Statistic | d.f. | p value | Levene's Test of Equality of Error Variances F | d.f. | p value | Group comparison | F or T | d.f. | p value | non parametric test | Statistic R (Z score) | p_value | p_adj(FDR_BH age) | Reject (FDR 5%) | p_adj(FDR_BH all) | Reject (FDR 5% all) | | | | |
|-----------|------------------|--------------|-------|-------------------------|-------------|-------------|-------------|------------------------|-------------|-------------|--|----------------------------|----------------------------|---|--------------------|---|---------------------|---------------------|-----------------------|-------------|---------------------|-----------------|-------------------|---------------------|-------------|-------|-------------|-------|
| Figure S5 | Entropy Analysis | +/+ = 29 | P8 | H0 | +/+ | 3.498357136 | 0.039966902 | 0.80600382 | 29 | 0.000107222 | 0.603014001 | 1, 52 | 0.440948408 | Linear Linear mixed model fit by REML. t-tests use Satterthwaite's method | Intercept | 72.269 | 149.84347 | <2e-16 | Mann-Whitney U test | 278 | 0.199480342 | 0.146080929 | 0.182601161 | FALSE | 0.208687041 | FALSE | | |
| | | | | | Dup/+ | 3.450560526 | 0.032943174 | 0.892057854 | 25 | 0.012371213 | | | | | GenotypeGenotype 2 | -0.672 | 149.84347 | 0.5027 | | | | | | | | | | |
| | | Dup/+ = 25 | H1 | +/+ | 2.705243357 | 0.041492546 | 0.871206052 | 29 | 0.002143995 | 0.38242447 | 1, 52 | 0.539008006 | LevelH1 | -15.328 | 208 | <2e-16 | Mann-Whitney U test | 248 | 0.270301765 | 0.047374465 | 0.109392808 | FALSE | 0.128727858 | FALSE | | | | |
| | | | | Dup/+ | 2.631590669 | 0.037918543 | 0.944677886 | 25 | 0.189705392 | | | | | LevelH2 | -21.199 | 208 | | | | | | | | | <2e-16 | | | |
| | | H2 | +/+ | 2.401446654 | 0.059154511 | 0.888251324 | 29 | 0.005184982 | 2.379370535 | 1, 52 | 0.129011331 | LevelH3 | -39.083 | 208 | <2e-16 | Mann-Whitney U test | 256 | 0.251416052 | 0.065635685 | 0.109392808 | FALSE | 0.13127137 | FALSE | | | | | |
| | | | Dup/+ | 2.299068583 | 0.042532117 | 0.95665067 | 25 | 0.351813282 | | | | | LevelH4 | -52.759 | 208 | | | | | | | | | <2e-16 | | | | |
| | | H3 | +/+ | 1.476027997 | 0.075210242 | 0.862143393 | 29 | 0.00136563 | 0.940910145 | 1, 52 | 0.336534269 | GenotypeGenotype 2:LevelH1 | -0.34 | 208 | 0.7342 | Mann-Whitney U test | 322 | 0.095608921 | 0.490856281 | 0.490856281 | FALSE | 0.490856281 | FALSE | | | | | |
| | | | Dup/+ | 1.585521827 | 0.057594065 | 0.95045726 | 25 | 0.25674055 | | | | | GenotypeGenotype 2:LevelH2 | -0.718 | 208 | | | | | | | | | 0.4737 | | | | |
| | | H4 | +/+ | 0.768416256 | 0.047275831 | 0.917918195 | 29 | 0.027013427 | 0.398935506 | 1, 52 | 0.530406498 | GenotypeGenotype 2:LevelH3 | 2.068 | 208 | 0.0398 | Mann-Whitney U test | 250 | 0.265580337 | 0.051491143 | 0.109392808 | FALSE | 0.128727858 | FALSE | | | | | |
| | | | Dup/+ | 0.908478371 | 0.043486268 | 0.964270278 | 25 | 0.505880047 | | | | | GenotypeGenotype 2:LevelH4 | 2.47 | 208 | | | | | | | | | 0.0143 | | | | |
| | | | | +/+ = 28 | P12 | H0 | +/+ | 3.469740476 | 0.057119829 | 0.648939526 | 28 | 5.84307E-07 | 0.841839576 | 1, 51 | 0.363189945 | Linear Linear mixed model fit by REML. t-tests use Satterthwaite's method | Intercept | 47.871 | 106.72325 | <2e-16 | Mann-Whitney U test | 301 | 0.119923106 | 0.390607224 | 0.390607224 | FALSE | 0.434008027 | FALSE |
| | | | | | | | Dup/+ | 3.528219234 | 0.048896408 | 0.674511356 | 25 | 3.37065E-06 | | | | | GenotypeGenotype 2 | 0.554 | 106.72325 | 0.581 | | | | | | | | |
| | | | | Dup/+ = 25 | H1 | +/+ | 2.746543857 | 0.046213596 | 0.887869313 | 28 | 0.006017184 | 0.002470484 | 1, 51 | 0.96055245 | LevelH1 | -11.01 | 204 | <2e-16 | Mann-Whitney U test | 229 | 0.29613665 | 0.03097225 | 0.120957474 | FALSE | 0.128727858 | FALSE | | |
| | | | | | | Dup/+ | 2.872577409 | 0.046339022 | 0.894157918 | 25 | 0.013718736 | | | | | LevelH2 | -16.07 | 204 | | | | | | | | | <2e-16 | |
| H2 | +/+ | | | 2.414151207 | 0.103695344 | 0.764556165 | 28 | 2.6908E-05 | 0.372269556 | 1, 51 | 0.544479025 | LevelH3 | -35.362 | 204 | <2e-16 | Mann-Whitney U test | 288 | 0.15173944 | 0.275693421 | 0.344616776 | FALSE | 0.344616776 | FALSE | | | | | |
| | Dup/+ | | | 2.536817513 | 0.095345098 | 0.821780346 | 25 | 0.000536925 | | | | | LevelH4 | -45.697 | 204 | | | | | | | | | <2e-16 | | | | |
| H3 | +/+ | | | 1.146965298 | 0.093104183 | 0.921221059 | 28 | 0.037185733 | 0.015626081 | 1, 51 | 0.901011568 | GenotypeGenotype 2:LevelH1 | 0.706 | 204 | 0.481 | Mann-Whitney U test | 251 | 0.242293622 | 0.079185064 | 0.131975107 | FALSE | 0.131975107 | FALSE | | | | | |
| | Dup/+ | | | 1.32931538 | 0.108329506 | 0.84821864 | 25 | 0.001629595 | | | | | GenotypeGenotype 2:LevelH2 | 0.671 | 204 | | | | | | | | | 0.503 | | | | |
| H4 | +/+ | | | 0.468072155 | 0.039788438 | 0.943658194 | 28 | 0.136938742 | 4.580686787 | 1, 51 | 0.037138842 | GenotypeGenotype 2:LevelH3 | 1.295 | 204 | 0.197 | Mann-Whitney U test | 239 | 0.271662546 | 0.048382989 | 0.120957474 | FALSE | 0.128727858 | FALSE | | | | | |
| | Dup/+ | | | 0.627438591 | 0.062334648 | 0.964552154 | 25 | 0.512337659 | | | | | GenotypeGenotype 2:LevelH4 | 1.055 | 204 | | | | | | | | | 0.293 | | | | |

| | Measurement | PND | Genotype | # of samples | Average | s.e.m | Shapiro-Wilk Test | | | | Levene Test | | Repeated Measures Two Way ANOVA | | | | | Parametric Test | | | | | | | | | | | | |
|------------|---------------------------|-----|----------|--------------|-------------|-------------|-------------------|-------------|---------------|-----------------|-------------|-----------------|---------------------------------|----------------|-------------------|-------------|-------------|-----------------|-------------|---------------|--------------|--------------|--------------|--------------|-------------|-------------|-------------|---------------|-----------------|------|
| | | | | | | | Statistic | p_value | p_adj(FDR BH) | Rejects (FDR5%) | Statistic | p_value | Source | Correction | Type III Sum o df | Mean Square | F | Sig. | Method | Sample 1 PND | Sample 2 PND | Sample 1 Gen | Sample 2 Gen | Statistic | dof | cohens_d | p_value | p_adj(FDR BH) | Rejects (FDR5%) | |
| Figure S6A | Call Numbers per Sequence | P08 | +/+ | 29 | 4.376493036 | 0.220384323 | 0.976920507 | 0.755315532 | 0.978401105 | FALSE | 0.111544474 | 0.953179059 | Within subject | | | 1 | 26.53609666 | 28.74011064 | 2.01547E-06 | Paired Studen | P08 | P12 | +/+ | +/+ | 2.733984803 | 27 | 0.516674563 | 0.010909988 | 0.021819977 | TRUE |
| | | | Dup/+ | 25 | 5.017433974 | 0.257384814 | 0.901350834 | 0.019634049 | 0.078536194 | FALSE | | | PND | Sphericity Ass | 26.53609666 | | | | | Paired Studen | P08 | P12 | Dup/+ | Dup/+ | 4.613183441 | 24 | 0.922636688 | 0.000111049 | 0.000444197 | TRUE |
| | | P12 | +/+ | 28 | 3.7313712 | 0.206874427 | 0.987596422 | 0.978401105 | 0.978401105 | FALSE | | | PND * Genotype | 3.376857561 | Ind Student T | | | | | P08 | P08 | Dup/+ | +/+ | 1.903121508 | 52 | 0.519390969 | 0.062567284 | 0.083423046 | FALSE | |
| | | | Dup/+ | 25 | 3.657601537 | 0.22370709 | 0.982086095 | 0.92307974 | 0.978401105 | FALSE | | | Error(PND) | 47.08892553 | Ind Student T | | | | | P12 | P12 | Dup/+ | +/+ | -0.242407564 | 51 | -0.06670142 | 0.809436575 | 0.809436575 | FALSE | |
| | | | | | | | | | | | | Between Subject | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | Genotype | | 2.12716119 | 1 | 2.12716119 | 1.148249041 | 0.288960794 | | | | | | | | | | | | |
| | | | | | | | | | | | | Error | | 94.47882543 | 51 | 1.852525989 | | | | | | | | | | | | | | |

| | Measurement | PND | Genotype | # of samples | Average | s.e.m | Shapiro-Wilk Test | | | | Levene Test | | Repeated Measures Two Way ANOVA | | | | | Parametric Test | | | | | | | | | | | | |
|------------|----------------------------|-----|----------|--------------|-------------|-------------|-------------------|-------------|---------------|-----------------|-------------|-----------------|---------------------------------|-------------|-------------------|-------------|-------------|-----------------|-------------|---------------|--------------|--------------|--------------|-------------|-------------|-------------|-------------|---------------|-----------------|------|
| | | | | | | | Statistic | p_value | p_adj(FDR BH) | Rejects (FDR5%) | Statistic | p_value | Source | Correction | Type III Sum o df | Mean Square | F | Sig. | Method | Sample 1 PND | Sample 2 PND | Sample 1 Gen | Sample 2 Gen | Statistic | dof | cohens_d | p_value | p_adj(FDR BH) | Rejects (FDR5%) | |
| Figure S6B | Duration (ms) per Sequence | P08 | +/+ | 29 | 614.918642 | 41.85700107 | 0.977835406 | 0.780762904 | 0.9918939 | FALSE | 0.388703949 | 0.761371642 | Within subject | | | 1 | 1526833.243 | 47.42112899 | 8.23097E-09 | Paired Studen | P08 | P12 | +/+ | +/+ | 4.063728541 | 27 | 0.767972508 | 0.000373831 | 0.000747663 | TRUE |
| | | | Dup/+ | 25 | 780.3928778 | 44.47433333 | 0.938151073 | 0.134155491 | 0.536621965 | FALSE | | | PND | | 1526833.243 | | | | | Paired Studen | P08 | P12 | Dup/+ | Dup/+ | 5.49247168 | 24 | 1.098494336 | 1.20E-05 | 4.81E-05 | TRUE |
| | | P12 | +/+ | 28 | 437.1422796 | 34.6905482 | 0.989698458 | 0.9918939 | 0.9918939 | FALSE | | | PND * Genotype | 95852.29056 | Ind Student T | | | | | P08 | P08 | Dup/+ | +/+ | 2.706655342 | 52 | 0.738687643 | 0.009172479 | 0.012229972 | TRUE | |
| | | | Dup/+ | 25 | 479.7347198 | 43.12219132 | 0.984598405 | 0.95862906 | 0.9918939 | FALSE | | | Error(PND) | 1642063.296 | Ind Student T | | | | | P12 | P12 | Dup/+ | +/+ | 0.776714611 | 51 | 0.213722571 | 0.440914842 | 0.440914842 | FALSE | |
| | | | | | | | | | | | | Between Subject | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | Genotype | | 279319.3161 | 1 | 279319.3161 | 4.767238404 | 0.033632663 | | | | | | | | | | | | |
| | | | | | | | | | | | | Error | | 2988162.939 | 51 | 58591.43017 | | | | | | | | | | | | | | |

| | Measurement | PND | Genotype | # of samples | Average | s.e.m | Shapiro-Wilk Test | | | | Levene Test | | Linear Mixed Models | | | | | Non Parametric Test | | | | | | | | | |
|------------|---------------------------|-----|----------|--------------|-------------|-------------|-------------------|-------------|---------------|-----------------|-------------|-------------|---------------------|-------------|-----|-----|-------------|---------------------|--------------|--------------|--------------|--------------|-----------|--------------|-------------|---------------|-----------------|
| | | | | | | | Statistic | p_value | p_adj(FDR BH) | Rejects (FDR5%) | Statistic | p_value | Source | F | df1 | df2 | Sig. | Method | Sample 1 PND | Sample 2 PND | Sample 1 Gen | Sample 2 Gen | Statistic | R (Z score) | p_value | p_adj(FDR BH) | Rejects (FDR5%) |
| Figure S6C | Sequence Numbers per 5min | P08 | +/+ | 29 | 83.06896552 | 6.667680122 | 0.987757565 | 0.977226022 | 0.977226022 | FALSE | 0.50752353 | 0.677955336 | Corrected Mo | 10.3507084 | 3 | 103 | 5.17081E-06 | Wilcoxon W | P08 | P12 | +/+ | +/+ | 60.5 | -0.613233719 | 0.000716209 | 0.001432419 | TRUE |
| | | | Dup/+ | 25 | 80.92 | 5.476896932 | 0.956341951 | 0.346444939 | 0.508507085 | FALSE | | | PND | 0.005180043 | 1 | 103 | 0.942763349 | Wilcoxon W | P08 | P12 | Dup/+ | Dup/+ | 73 | -0.481633721 | 0.014722049 | 0.019629399 | TRUE |
| | | P12 | +/+ | 28 | 58.03571429 | 5.764900671 | 0.96165589 | 0.381380313 | 0.508507085 | FALSE | | | Genotype | 10.84514907 | 1 | 103 | 0.001358106 | MannWhitney | P08 | P08 | Dup/+ | +/+ | 343.5 | -0.044853568 | 0.756791796 | 0.756791796 | FALSE |
| | | | Dup/+ | 25 | 107.2 | 7.838154545 | 0.871645746 | 0.004668518 | 0.018674074 | TRUE | | | PND * Genoty | 20.40774626 | 1 | 103 | 1.67252E-05 | MannWhitney | P12 | P12 | Dup/+ | +/+ | 138.5 | 0.52879996 | 1.00304E-05 | 4.01214E-05 | TRUE |

| Figure | Measurement | Position | # of samples | Average | s.e.m | Shapiro Wilk Test | | | | Levene Test | | | | Paired t Test | | | |
|-------------|---------------------------|----------|--------------|-------------|-------------|-------------------|-------------|-----------------------------|-----------|-------------|-----|---------|-------------|---------------|----------|--------------|-------------|
| | | | | | | Statistic | p_value | p_adj(FDR BH):ejects(FDR 5% | Statistic | df1 | df2 | p_value | Statistic | dof | cohens_d | p_value | |
| Figure S10A | Nose at tube entrance (s) | (nS) | 17 | 19.81933441 | 2.684082676 | 0.915771238 | 0.12524154 | 0.250483081 | FALSE | 0.119094861 | 1 | 32 | 0.732276424 | -0.818035202 | 16 | -0.198402679 | 0.425352641 |
| | | (S) | 17 | 23.22640118 | 2.640568665 | 0.956327896 | 0.563807919 | 0.563807919 | FALSE | | | | | | | | |

| Figure | Measurement | cols | count | mean | sem | Shapiro Wilk Test | | | | Levene Test | | | | Wilcoxn signed-rank test | | |
|-------------|----------------------|------|-------|-------------|-------------|-------------------|-------------|-----------------------------|-----------|-------------|-----|---------|-------------|--------------------------|--------------|-------------|
| | | | | | | Statistic | p_value | p_adj(FDR BH):ejects(FDR 5% | Statistic | df1 | df2 | p_value | Statistic | R (Z score) | p_value | |
| Figure S10B | Nose at tube end (s) | (nS) | 17 | 29.31113176 | 3.640570563 | 0.862614418 | 0.01680074 | 0.033601481 | TRUE | 2.541673618 | 1 | 32 | 0.120707945 | 56 | -0.235364135 | 0.352874756 |
| | | (S) | 17 | 37.39363294 | 5.829846742 | 0.917768398 | 0.135377883 | 0.135377883 | FALSE | | | | | | | |

| Figure | Measurement | cols | count | mean | sem | Shapiro Wilk Test | | | | Levene Test | | | | Wilcoxn signed-rank test | | |
|-------------|--------------------------|------|-------|-------------|-------------|-------------------|-------------|-----------------------------|-----------|-------------|-----|---------|-------------|--------------------------|--------------|-------------|
| | | | | | | Statistic | p_value | p_adj(FDR BH):ejects(FDR 5% | Statistic | df1 | df2 | p_value | Statistic | R (Z score) | p_value | |
| Figure S10C | Latency to nose poke (s) | (nS) | 17 | 45.56470588 | 7.697528161 | 0.883609713 | 0.036397945 | 0.036397945 | TRUE | 0.419427106 | 1 | 32 | 0.521842697 | 35 | -0.476468859 | 0.050537109 |
| | | (S) | 17 | 30.18588235 | 9.001478925 | 0.520107495 | 1.92761E-06 | 3.85521E-06 | TRUE | | | | | | | |

| Figure 13 Lasso | Fold | Session | Genotype | # of samples | Call/Call 1 of Sequence/Gene (PFC) | Call 2 Measurement | Test | R | p_value | |
|-----------------|-----------------------|-----------------------|--------------|--------------|------------------------------------|-------------------------|-----------------------------------|--------------|--------------|-------------|
| Figure 13 Lasso | 1 | SI1 | +/+ | 22 | Ch | Sd Number | Pearson's Correlation Coefficient | 0.571896831 | 0.005421592 | |
| | | | | | Cx | Sd Percentage | | 0.610758679 | 0.002534368 | |
| | | | | | F | Ch Percentage | | 0.659305488 | 0.000845157 | |
| | | | | | Ch | D Markov Probability | | -0.509168949 | 0.015510474 | |
| | | | | | Dup/+ | 20 Har | | D Number | 0.81614036 | 1.14525E-05 |
| | | SI2 | +/+ | 22 | Har | Number | | -0.522676775 | 0.012570605 | |
| | | | | | Sh | Percentage | | 0.533025635 | 0.010640366 | |
| | | | | | Cx | Amb Number | | -0.491687903 | 0.020118232 | |
| | | | | | Amb | Har Number | | -0.512534639 | 0.014730488 | |
| | | | | | Su | Su Percentage | | 0.606572248 | 0.002763494 | |
| | | | | | Sh | Sh Percentage | | 0.450966665 | 0.035162971 | |
| | | | | | Sh | F Percentage | | 0.668716931 | 0.000667896 | |
| | | | | | Amb | F Percentage | | -0.419266446 | 0.052098856 | |
| | | | | | Sd | Ts Markov Probability | | 0.468569169 | 0.027838076 | |
| | | | | | Amb | Har Markov Probability | | -0.478995028 | 0.024108184 | |
| | | | | | Amb | Ts Markov Probability | | 0.409551208 | 0.05838079 | |
| | | | | | Dup/+ | 20 D | | Sd Number | 0.733822048 | 0.000230775 |
| | | | | | Sh | Ch Markov Probability | | -0.523221084 | 0.01791599 | |
| | | | | | Herc2 | | | | -0.411763068 | 0.071248648 |
| | | | | | Magel2 | | | | -0.524240167 | 0.017654265 |
| | 2 | SI1 | +/+ | 22 | Sh | Ch Percentage | 0.5996984 | 0.003177436 | | |
| | | | | | F | Ch Percentage | 0.701499336 | 0.000274908 | | |
| | | | | | U | Amb Percentage | 0.681597674 | 0.000477456 | | |
| | | | | | Dup/+ | 20 Sd | Sd Number | 0.579632665 | 0.007392767 | |
| | | | | | F | Sd Number | 0.577084446 | 0.007720103 | | |
| | | SI2 | +/+ | 22 | Cx | Har Markov Probability | 0.521795839 | 0.018287221 | | |
| | | | | | Su | F Number | 0.27262455 | 0.219635673 | | |
| | | | | | Cx | Amb Number | -0.292172624 | 0.187026358 | | |
| | | | | | Sh | Ms Number | 0.253776655 | 0.25444611 | | |
| | | | | | Su | Su Percentage | 0.698517987 | 0.00029943 | | |
| | | | | | Su | Ch Percentage | -0.286164433 | 0.19667498 | | |
| | | | | | Sd | D Percentage | -0.297778373 | 0.178319528 | | |
| | | | | | Sh | Ms Percentage | 0.253776655 | 0.25444611 | | |
| | | | | | Sh | F Percentage | 0.604562633 | 0.002879524 | | |
| | | | | | U | D Percentage | 0.636561632 | 0.001446378 | | |
| | | | | | Su | F Markov Probability | 0.274643516 | 0.216104173 | | |
| | | | | | Cx | Ts Markov Probability | -0.267805755 | 0.228218263 | | |
| | | | | | Amb | Har Markov Probability | -0.274757077 | 0.215906664 | | |
| | | | | | Amb | Ts Markov Probability | 0.376381333 | 0.084260914 | | |
| | | | | | Dup/+ | 20 Har | D Number | 0.576576696 | 0.007786721 | |
| | Sd | Sd Number | 0.633042038 | 0.002736044 | | | | | | |
| | Sd | Ms Number | 0.642930513 | 0.002230953 | | | | | | |
| | Magel2 | | | -0.573924156 | 0.008142424 | | | | | |
| | 3 | SI1 | +/+ | 22 | F | Ch Percentage | 0.713829295 | 0.000190954 | | |
| | | | | | U | Amb Percentage | 0.763005609 | 3.63197E-05 | | |
| | | | | | Dup/+ | 20 Har | D Number | 0.574548877 | 0.008057478 | |
| | | | | | Sh | Amb Number | 0.584268874 | 0.006826356 | | |
| | | | | | F | Sd Number | 0.596300756 | 0.005520324 | | |
| | | SI2 | +/+ | 22 | R Ch | Percentage | 0.685116834 | 0.000434376 | | |
| | | | | | D | R Ch Number | 0.516450799 | 0.01386335 | | |
| | | | | | Sh | R Ch Number | 0.492943241 | 0.019754415 | | |
| | | | | | D | R Ch Percentage | 0.478982604 | 0.024112378 | | |
| | | | | | F | Sd Percentage | -0.449764821 | 0.035713576 | | |
| | | | | | Cx | Su Markov Probability | 0.510622713 | 0.01516956 | | |
| | | | | | Sd | Ts Markov Probability | 0.468170695 | 0.027989235 | | |
| | | | | | Ch | R Ch Markov Probability | 0.569860019 | 0.005627892 | | |
| | | | | | Sh | R Ch Markov Probability | 0.640000756 | 0.00133714 | | |
| | | | | | F | Sh Markov Probability | -0.543298688 | 0.008971505 | | |
| | | | | | Magel2 | | | 0.490465287 | 0.020477227 | |
| | | | | | Dup/+ | 20 D | Sd Number | 0.604076936 | 0.004791351 | |
| | | | | | Ts | U Markov Probability | -0.52761939 | 0.016808203 | | |
| | | | | | F | Sd Markov Probability | 0.534881058 | 0.01509985 | | |
| | | | | | U | Sd Markov Probability | 0.496867778 | 0.025834045 | | |
| | Herc2 | | | -0.402386619 | 0.078596778 | | | | | |
| | Magel2 | | | -0.618523353 | 0.003647569 | | | | | |
| | 4 | SI1 | +/+ | 23 | Cx | Sd Percentage | 0.550315431 | 0.006511566 | | |
| | | | | | Ch | Sd Percentage | 0.647410379 | 0.000839374 | | |
| | | | | | F | Ch Percentage | 0.696204614 | 0.000224518 | | |
| | | | | | F | U Percentage | 0.55671467 | 0.005795746 | | |
| | | | | | Dup/+ | 20 Har | D Number | 0.6092861 | 0.004348969 | |
| | | | SI2 | +/+ | 23 | F | Sd Number | 0.532983272 | 0.015532208 | |
| | | | | | | Amb | D Number | 0.605735619 | 0.004646634 | |
| | | | | | | Cx | Har Markov Probability | 0.522120356 | 0.018202159 | |
| | | | | | | Ch | Ts Markov Probability | -0.520480217 | 0.018635328 | |
| | | | | | | D | Ts Number | -0.385608019 | 0.069186662 | |
| | | SI2 | +/+ | 23 | Su | Su Percentage | 0.619472938 | 0.00162019 | | |
| | | | | | Cx | D Percentage | -0.497853147 | 0.01562921 | | |
| | | | | | Sd | D Percentage | -0.359175396 | 0.092338731 | | |
| | | | | | D | U Percentage | -0.381557643 | 0.072413287 | | |
| | | | | | Sh | Sh Percentage | 0.438859632 | 0.036174942 | | |
| | | | | | Sh | F Percentage | 0.568273012 | 0.004668907 | | |
| | | | | | U | D Percentage | 0.543095459 | 0.007406031 | | |
| | | | | | U | U Percentage | 0.490752302 | 0.017421557 | | |
| | | | | | Sd | Har Markov Probability | 0.447904395 | 0.032088877 | | |
| | | | | | Sd | Ts Markov Probability | 0.373941343 | 0.078787926 | | |
| | Amb | Ts Markov Probability | 0.5043375 | 0.014126468 | | | | | | |
| | Dup/+ | 20 Sd | D Number | 0.599094574 | 0.005248588 | | | | | |
| | F | D Percentage | -0.387972816 | 0.090970249 | | | | | | |
| | Sd | Cx Markov Probability | -0.554405986 | 0.011188343 | | | | | | |
| | Sd | Ch Markov Probability | -0.652384624 | 0.001823357 | | | | | | |
| | 5 | SI1 | +/+ | 23 | F | Ch Percentage | 0.698607384 | 0.000209037 | | |
| | | | | | U | Amb Percentage | 0.738382533 | 5.75157E-05 | | |
| | | | | | Sh | Ch Markov Probability | 0.588337861 | 0.003147731 | | |
| | | | | | Dup/+ | 20 Sd | Su Number | -0.466466964 | 0.038148919 | |
| | | | | | Ch | Har Markov Probability | 0.575906273 | 0.007875401 | | |
| | | | SI2 | +/+ | 23 | Sh | Amb Markov Probability | 0.633347013 | 0.002719155 | |
| | | | | | | Su | Su Percentage | 0.598097079 | 0.002574583 | |
| | | | | | | Su | Ch Percentage | -0.444059986 | 0.033778364 | |
| | | | | | | Ts | Amb Percentage | -0.350135174 | 0.101448395 | |
| | | | | | | Sh | Su Percentage | -0.457449436 | 0.02818304 | |
| SI2 | | +/+ | 23 | Sh | F Percentage | 0.535302774 | 0.008483541 | | | |
| | | | | U | D Percentage | 0.521028874 | 0.010793395 | | | |
| | | | | Amb | Sh Percentage | -0.365693773 | 0.086158123 | | | |
| | | | | Sd | Har Markov Probability | 0.455201883 | 0.029066677 | | | |
| | | | | Sd | Ts Markov Probability | 0.486156658 | 0.018667957 | | | |
| | | | | D | R Ch Markov Probability | 0.538270026 | 0.00805891 | | | |
| | | | | Sh | Ms Markov Probability | 0.49195749 | 0.017106129 | | | |
| | | | | Dup/+ | 20 Cx | Ms Number | -0.462212733 | 0.040184261 | | |
| | | | | Ms | F Number | -0.462212733 | 0.040184261 | | | |
| | | | | Su | Ch Percentage | -0.504052987 | 0.023443945 | | | |
| Ms | Ts Markov Probability | 0.533949781 | 0.015310791 | | | | | | | |
| Sh | D Markov Probability | -0.602157637 | 0.004963427 | | | | | | | |
| Herc2 | | | -0.529948024 | 0.01624432 | | | | | | |

| | Region | Session | qPCR | Genotype | # of Samples | R | p_value | FDR(5%) | FDR(10%) | FDR(25%) |
|------------|--------|---------|--------------|-------------|--------------|--------------|-------------|---------|----------|----------|
| Figure S14 | PFC | SI2 | Herc2 | +/+ | 29 | 0.158822901 | 0.410560232 | FALSE | FALSE | FALSE |
| | | | | Dup/+ | 25 | -0.390540691 | 0.053584611 | FALSE | FALSE | TRUE |
| | | | Gabr g3 | +/+ | 29 | 0.062114817 | 0.748897002 | FALSE | FALSE | FALSE |
| | | | | Dup/+ | 25 | -0.216114501 | 0.299466899 | FALSE | FALSE | FALSE |
| | | | Gabr a5 | +/+ | 29 | 0.119105682 | 0.53829916 | FALSE | FALSE | FALSE |
| | | | | Dup/+ | 25 | -0.045735887 | 0.828142008 | FALSE | FALSE | FALSE |
| | | | Gabr b3 | +/+ | 29 | -0.126225334 | 0.514103352 | FALSE | FALSE | FALSE |
| | | | | Dup/+ | 25 | -0.292430525 | 0.156037508 | FALSE | FALSE | FALSE |
| | | | Atp10a | +/+ | 29 | -0.037476018 | 0.84695523 | FALSE | FALSE | FALSE |
| | | | | Dup/+ | 25 | -0.040754391 | 0.846630416 | FALSE | FALSE | FALSE |
| | | | Ube3a | +/+ | 29 | 0.226439467 | 0.237525419 | FALSE | FALSE | FALSE |
| | | | | Dup/+ | 25 | -0.259090787 | 0.211073027 | FALSE | FALSE | FALSE |
| | | | Snrpn | +/+ | 29 | 0.090708924 | 0.639811584 | FALSE | FALSE | FALSE |
| | | | | Dup/+ | 25 | -0.191962301 | 0.357958284 | FALSE | FALSE | FALSE |
| | | | Ndn | +/+ | 29 | 0.292883939 | 0.123101211 | FALSE | FALSE | FALSE |
| | | | | Dup/+ | 25 | -0.381061528 | 0.060192341 | FALSE | FALSE | TRUE |
| | | | Magel2 | +/+ | 29 | 0.227037789 | 0.236254796 | FALSE | FALSE | FALSE |
| | | | | Dup/+ | 25 | -0.51917529 | 0.00782649 | FALSE | TRUE | TRUE |
| Mkrn3 | +/+ | 29 | -0.07097919 | 0.714452232 | FALSE | FALSE | FALSE | | | |
| | Dup/+ | 25 | -0.192833196 | 0.355739851 | FALSE | FALSE | FALSE | | | |