**JazzNets Experiment 1 Results**

**RESPONSES**

**Responses WITH 20**

A logistic regression analysis with five predictors (*distance, musician status, distance\*musician status, hours a week spent listening to music, hours a week spent listening to jazz*) tested whether participants judged pairs of melodic sequences as related at distances 1, 2, 3, 4, 6, 10, and 20. Overall, the model provided a significantly better fit than an intercept-only model, χ2 (5, *N* = 17802) = 115.41, *p* < .001. The model correctly classified approximately 55.7% of trials. Controlling for the other variables in the model, there was no significant effect of distance, *z =* -0.37, *p* = .71, however, visual inspection of the means (Fig. 1) revealed that, contrary to our initial predictions, on average participants judged the distance 20 pairs as related in 64.4% of trials. We decided to examine the other predictors in the model at distances up to 10 separately from distance 20 trials. We also conducted a melodic similarity analysis of the distance 20 stimuli to determine whether our *a priori* designation of these pairs as unrelated should be changed for the reaction time analysis.

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*Figure 1*

**Responses WITHOUT 20**

A logistic regression analysis with the same five predictors tested whether participants judged pairs of melodic sequences as related at distances 1, 2, 3, 4, 6, and 10 (removing trials where they judged the distance 20 stimuli). Overall, this model provided a significantly better fit than an intercept-only model, χ2 (5, *N* = 15248) = 691.17, *p* < .001. The model correctly classified approximately 57.6% of trials.

Controlling for other variables in the model, a 1-unit increase in distance decreased the odds a participant would judge a pair as related by a factor of .86, *z* = -18.71, *p* < .001, 95% CI [.85, .88]. Holding other variables constant, each additional self-reported hour spent listening to music increased the odds a participant would judge a pair as related by a factor of 1.01, *z* = 8.32, *p* < .001, 95% CI [1.005, 1.008]. Holding other variables constant, each additional self-reported hour spent listening specifically to jazz decreased the odds a participant would judge a pair as related by a factor of .97, *z* = -4.89, *p* < .001, 95% CI [.96, .98]. Controlling for other variables in the model, whether or not the participant was a musician was not reliably associated with the relatedness judgement, OR = 1.07, *z* = 1.05, *p* = .29, 95% CI [.96, .98]. The interaction between musicianship and distance was not significant, *z* = 1.91, *p* = .056. Taken together, these results indicate that for distances prior to 10, relatedness judgements decrease with increases in distance. Additionally, music listening habits are a more important factor in these judgements than musicianship at lower distances.

**Responses 10 & 20 ONLY**

Next, a logistic regression analysis with the same five predictors was conducted for the trials at distances 10 and 20. A model with all the predictors provided a significantly better fit than an intercept-only model, χ2 (5, *N* = 5085) = 369.38, *p* < .001. The model correctly classified approximately 62.5% of trials.

Controlling for other variables in the model, a 1-unit increase in distance increased the odds a participant would judge a pair as related by a factor of 1.13, *z* = 14.96, *p* < .001, 95% CI [1.11, 1.15]. Holding other variables constant, each additional self-reported hour spent listening to music increased the odds a participant would judge a pair as related by a factor of 1.01, *z* = 6.023, *p* < .001, 95% CI [1.006, 1.012]. Holding other variables constant, each additional self-reported hour spent listening specifically to jazz decreased the odds a participant would judge a pair as related by a factor of .97, *z* = -3.01, *p* < .01, 95% CI [.95, .99]. Controlling for other variables in the model, being a musician increased the odds a participant would judge a pair as related by a factor of 1.92, *z* = 3.55, *p* < .001, 95% CI [1.34, 2.76].

For distances 10 and 20, the interaction between distance and musicianship was significant, *z* = -3.23, *p* < .01. For musicians, there was a simple effect of distance such that a 1-unit increase in distance increased the odds a participant would judge a pair as related by a factor of 1.08, *z* = 9.84, *p* < .001, 95% CI [1.07, 1.10]. For non-musicians, there was a simple effect of distance such that a 1-unit increase in distance increased the odds a participant would judge a pair as related by a factor of 1.13, *z* = 14.87, *p* < .001, 95% CI [1.11, 1.14]. Taken together, these results indicate that for distances 10 and 20, judgements of relatedness increase, rather than decrease. Listening habits and musicianship contribute to these decisions at these distances.

**Responses 1-10 but just MUSICIANS (for other predictors)**

For participants who were musicians, information on their musical background was collected. As above, we analyzed these traits (*primary instrument proficiency, proficiency at improvising, hours currently spent playing music per week, hours spent playing jazz per week, percentage of playing time spent improvising*) separately for distances above and below 10. For distances 1-10 in the musician group, a logistic regression with these predictors, controlling for distance, tested how the musician group made relatedness judgements. This model provided a significantly better fit than one that just included distance, χ2 (5, *N* = 7109) = 128.89, *p* < .001. Holding other variables constant, each one-unit increase in self-rated proficiency on their primary instrument increased the odds a participant would judge a pair as related by a factor of 1.10, *z* = 5.31, *p* < .001, 95% CI [1.06, 1.14]. Holding other variables constant, each one-unit increase in self-rated proficiency in improvisation decreased the odds a participant would judge a pair as related by a factor of .93, *z* = -3.43, *p* < .001, 95% CI [.89, .97]. Holding other variables constant, each one-hour increase in hours spent playing music per week decreased the odds a participant would judge a pair as related by a factor of .95, *z* = -5.82, *p* < .001, 95% CI [.93, .97]. Holding other variables constant, each one-hour increase in hours spent improvising per week increased the odds a participant would judge a pair as related by a factor of 1.17, *z* = 8.65, *p* < .001, 95% CI [1.13, 1.21]. Percentage of total playing time spent improvising was not significantly related to the relatedness judgement, OR = .99, *z* = -.69, *p* = .49.

**Responses 10 & 20 MUSICIANS**

For distances 10 and 20 in the musician group, a logistic regression with these same predictors, controlling for distance, tested how the musician group made relatedness judgements. This model provided a significantly better fit than one that just included distance, χ2 (5, *N* = 2366) = 47.77, *p* < .001. Holding other variables constant, each one-unit increase in self-rated proficiency on their primary instrument increased the odds a participant would judge a pair as related by a factor of 1.12, *z* = 3.57, *p* < .001, 95% CI [1.05, 1.19]. Holding other variables constant, each one-unit increase in self-rated proficiency in improvisation decreased the odds a participant would judge a pair as related by a factor of .84, *z* = -4.43, *p* < .001, 95% CI [.78, .91]. Holding other variables constant, each one-hour increase in hours spent playing music per week decreased the odds a participant would judge a pair as related by a factor of .95, *z* = -3.52, *p* < .001, 95% CI [.93, .98]. Holding other variables constant, each one-hour increase in hours spent improvising per week increased the odds a participant would judge a pair as related by a factor of 1.17, *z* = 5.04, *p* < .001, 95% CI [1.10, 1.24]. Percentage of total playing time spent improvising was not significantly related to the relatedness judgement, OR = .99, *z* = -.47, *p* = .64.

**Responses DISTANCE 1-4**

The stimuli pairs for distances 1 through 4 contain overlapping note content, with distance 1 pairs overlapping with each other by 4 notes and distance 4 pairs overlapping by 1 note. As such, we *a priori* designated these pairs as related. To see what participants were doing at these distances, a logistic regression for distances 1-4 was conducted, including the same listening and musicianship predictors as the larger models from above. This model provided a significantly better fit than an intercept-only model, χ2 (5, *N* = 10187) = 304.5, *p* < .001. The model correctly classified approximately 62.5% of trials.

Controlling for other variables in the model, a 1-unit increase in distance decreased the odds a participant would judge a pair as related by a factor of .76, *z* = -10.78, *p* < .001, 95% CI [.73, .80]. Holding other variables constant, each additional self-reported hour spent listening to music increased the odds a participant would judge a pair as related by a factor of 1.007, *z* = 6.55, *p* < .001, 95% CI [1.005, 1.009]. Holding other variables constant, each additional self-reported hour spent listening specifically to jazz decreased the odds a participant would judge a pair as related by a factor of .95, *z* = -6.67, *p* < .001, 95% CI [.94, .97]. Controlling for other variables in the model, whether or not the participant was a musician was not reliably associated with the relatedness judgement, OR = 1.21, *z* = 1.82, *p* = .068, 95% CI [.99, 1.49]. The interaction between musicianship and distance was not significant, *z* = -.55, *p* = .58.

**MELODIC SIMILARITY?**

**RT**

Prior to examining the reaction time data, trials were excluded from analysis if they were “incorrect” and did not align with whether the stimuli pair actually shared notes. For distances 1-4, “no” trials were excluded, while for distances 6 and 10, “yes” trials were excluded. While we *a priori* determined that distance 20 was unrelated (as the stimuli did not directly overlap), the above results from the participant responses and melodic similarity analysis suggested that we should also consider distance-20 trials which were judged as related. Therefore, we include both analyses in our discussion of the reaction time results.

**RT, 20 = Unrelated**

With trials at distance 20 that were judged as unrelated included, a regression analysis was conducted to predict reaction time from distance, musician status, the interaction between distance and musician status, hours per week spent listening to music, and hours per week spent listening to jazz. A model that included these predictors fit the data significantly better than an intercept-only model, *F*(5, 9967) = 28.67, *p* < .001, PRE = .014. Analysis of individual predictors revealed a significant effect of distance such that each 1-unit increase in distance increased reaction time by .01 s, *t*(9967) = 3.65, *p* < .001, PRE = .001, 95% CI [.004, .015]. Musicians and non-musicians were not significantly different in reaction time, *t*(9967) = 1.38, *p* = .168, PRE < .001, 95% CI [-.02, .17]. Weekly time spent listening to music significantly predicted reaction time such that each additional self-reported hour of music listening increased reaction time by .001 s, *t*(9967) = 2.51, *p* = .01, PRE = .001, 95% CI [.001, .002]. Weekly jazz listening significantly predicted reaction time such that each additional self-reported hour spent listening to jazz increased reaction time by .032 s, *t*(9967) = 8.54, *p* < .001, PRE = .007, 95% CI [.025, .04]. The interaction between distance and musicianship was not significant, *t*(9967) = -.22, *p* = .83.

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**RT, 20 = Related**

With trials at distance 20 that were judged as related included, a regression analysis was conducted to predict reaction time from distance, musician status, the interaction between distance and musician status, hours per week spent listening to music, and hours per week spent listening to jazz. A model that included these predictors fit the data significantly better than an intercept-only model, *F*(5, 10703) = 17.51, *p* < .001, PRE = .008. Analysis of individual predictors did not reveal a significant effect of distance, *t*(10703) = -.92, *p* =.36. However, visual inspection of the means revealed a peak in reaction time at distance 4, followed by a decrease in reaction time through distance 20. We conducted separate regressions for distances 1-4 and distances 4-20.

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**RT DISTANCE 1-4 (20 = Related)**

From distances 1 through 4, a regression analysis was conducted to predict reaction time from distance, musician status, the interaction between distance and musician status, hours per week spent listening to music, and hours per week spent listening to jazz. A model that included these predictors fit the data significantly better than an intercept-only model, *F*(5, 6103) = 18.09, *p* < .001, PRE = .015. Holding other variables constant, there was a significant effect of distance such that each 1-unit increase in distance increased reaction time by .05 s, *t*(6103) = 3.76, *p* < .001, PRE = .002, 95% CI [.03, .08]. Holding other variables constant, there was a significant effect of weekly music listening such that each additional self-reported hour of listening increased reaction time by .001 s, *t*(6103) = 2.56, *p* = .01, PRE = .001, 95% CI [.0001, .002]. There was also an effect of weekly jazz listening such that each additional self-reported hour of listening specifically to jazz increased reaction time by .03 s, *t*(6103) = 5.72, *p* < .001, PRE = .005, 95% CI [.02, .04]. There was no significant differences between the musicians and non-musicians in reaction time at these distances, *t*(6103) = 1.05, *p* = .296, and the interaction between distance and musicianship was also not significant, *t*(6103) = -.16, *p* = .873.

**RT DISTANCE 4-20 (20 = Related)**

For distances 4, 6, 10, and 20, a regression analysis was conducted to predict reaction time from distance, musician status, the interaction between distance and musician status, hours per week spent listening to music, and hours per week spent listening to jazz. A model that included these predictors fit the data significantly better than an intercept-only model, *F*(5, 5871) = 9.26, *p* < .001, PRE = .008. Holding other variables constant, there was a significant effect of distance such that each 1-unit increase in distance decreased reaction time by -.01 s, *t*(5871) = -2.37, *p* = .018, PRE = .001, 95% CI [-.013, -.001]. There was a significant effect of weekly listening to jazz such that each additional self-reported hour of jazz listening increased reaction time by .03 s, *t*(5871) = -4.61, *p* < .001, PRE = .004, 95% CI [.014, .035]. General music listening was not significantly related to reaction time at these distances, *t*(5871) = 1.41, *p* = .159, nor was musicianship, *t*(5871) = .57, *p* = .567. The interaction between distance and musicianship was also not significant at these distances, *t*(5871) = .13, *p* = .893.