Musikwissenschaftliche Experimentelle und Empirische Musikforschung

Music Research
Experimental and Empirical

Experimenterelle u. Empirische Musikforschung

31/2-1995

Systematische Musikfakultät

Systematic Musicology

MUSIKWISSENSCHAFTLICHE SYSTEMATISCHE MUSICFOLGY
Osher Eschol

The issue of their experimental and other empirical music research in the field of music education is to be explored in this volume. Special thanks are due to some young researchers who have contributed to this book.

We like to thank all authors who have sent in their papers to be published in this volume of the International Journal of Music Education. The editors of the University of Vienna, in cooperation with the international community of music education and psychology, have made it possible to publish this collection of papers and studies. The volume includes a section on music education and music psychology, with articles by leading experts in the field. The articles in this volume cover topics in music education and psychology, as well as empirical and experimental methodologies.
The motion of a hearing object can be used to understand how the music acoustic effects of instruments can be studied in detail. In the previous study, the authors demonstrated that the movement of a musical instrument can significantly affect the perceived sound. This was done by analyzing the soundwave patterns and detecting changes in the acoustic properties of the instrument as it moved. The results showed that the movement of the instrument can alter the harmonic content and the overall timbre of the sound. These findings are crucial for understanding how music is perceived and how it can be manipulated to create different musical effects. The implications of this research are far-reaching, as it can be applied to various fields such as music therapy, music composition, and audio engineering.
The diagram illustrates the relationship between emotional and cognitive factors in decision-making. The graph shows the interaction of emotional and cognitive dimensions in decision processes, indicating how emotional and cognitive factors influence each other. The diagram is used to explain how these factors can be balanced to make effective decisions in various contexts.

The main axes represent different dimensions of emotional and cognitive factors. The emotional factors are represented on the horizontal axis, while the cognitive factors are on the vertical axis. The diagram includes several nodes and connections, each representing a specific aspect of the interaction between emotional and cognitive factors.

The nodes are connected by lines, indicating the flow or interaction between these factors. The diagram is designed to help understand the complex relationship between emotional and cognitive processes and how they influence decision-making.

The diagram is part of a larger discussion on how these factors can be balanced in decision-making, and it is used to illustrate the importance of considering both emotional and cognitive perspectives in making effective decisions.

The diagram provides a visual representation of the discussed concepts, making it easier to understand the complex interactions between emotional and cognitive factors in decision-making.
Experiments conducted to date suggest that the effect of musical context on the neural response to music is not only present, but also interacts with other cognitive processes. For example, when music is presented in a context that is familiar and expected, the neural response is enhanced. Conversely, when the context is unexpected or novel, the neural response is diminished. This effect is thought to be mediated by the brain's ability to predict and anticipate incoming information, which is crucial for attentional processes and the binding of sensory information.

In a study by Krumhansl and Krumhansl (1982), participants were presented with sequences of musical excerpts, some of which were expected based on the context, while others were unexpected. The results showed that the expected sequences elicited a stronger neural response in the auditory cortex, indicating that the brain is more actively engaged with music that is consistent with the expected context.

Another study by Krumhansl and Krumhansl (1990) investigated the role of musical context in emotional responses. Participants were presented with a series of musical excerpts, some of which were associated with positive emotions (e.g., happy) and others with negative emotions (e.g., sad). The results showed that the positive context enhanced the neural response to the associated music, while the negative context diminished it. This effect is thought to be mediated by the brain's ability to predict and anticipate the emotional impact of incoming information.

These studies suggest that the neural response to music is not only influenced by the sensory qualities of the music itself, but also by the context in which it is presented. This is further supported by studies showing that musical context can modulate the perception and interpretation of music. For example, when music is presented in a context that is consistent with the listener's expectations, the music is perceived as more pleasant and enjoyable. Conversely, when the context is inconsistent, the music is perceived as less pleasant and enjoyable.

These findings have important implications for the design of musical interfaces, such as those used in interactive music games or concerts. By carefully considering the musical context in which music is presented, designers can enhance the listener's experience and make music more engaging and enjoyable.

In conclusion, the study of musical context provides a framework for understanding the neural response to music and the role of expectation in shaping this response. Future research should continue to explore the complex interplay between musical context and neural response, with the goal of developing new and innovative approaches for engaging and enhancing the listener's experience. 
The principle of realism is that small implications are in different directions.

Recall, for instance, that in different directions, the implicit and explicit implications are different.

For instance, consider an object moving in a circle. The implicit and explicit implications are different in different directions. For instance, consider an object moving in a circle. The implicit and explicit implications are different in different directions.
The results of the Cundy and Hannay (1965) experiment also touch on the role of conditional probability in causal reasoning. Specifically, their experiment assesses the role of causal and conditional information in decision-making. The model assumes that decision-makers are influenced by both causal and conditional information, and their decision-making process is assessed through a series of experiments. The results of these experiments provide evidence for the role of conditional probability in causal reasoning.

Repetition model

Experiments with different causal models and decision rules indicate that the role of conditional probability in causal reasoning is not uniform. In some cases, causal models can be more effective in predicting outcomes, while in other cases, decision rules that incorporate conditional probability may be more effective. The role of conditional probability in causal reasoning is thus context-dependent and may vary depending on the specific decision-making situation.

Context and expectation: Top-down and bottom-up models

Foundational work on expectation and causal models suggests that causal models can be more effective in predicting outcomes when they are supported by stronger evidence. In contrast, decision rules that incorporate conditional probability may be more effective when there is weak evidence for the causal model. The role of conditional probability in causal reasoning is thus context-dependent and may vary depending on the specific decision-making situation.

Conclusion

In conclusion, the role of conditional probability in causal reasoning is an active area of research in cognitive science. Future work in this area will continue to explore the role of causal and conditional information in decision-making and how these factors influence our ability to make accurate predictions.

Systematic misrepresentations

Systematic misrepresentations of causal probability are a major challenge in understanding causal reasoning. These misrepresentations can occur in various forms, such as overestimation of causal probability or underestimation of the role of conditional probability. Future work in this area will continue to explore the factors that influence these misrepresentations and how they can be addressed.
Diatomic Scale

C  D  E  F  G  A  B  C  D  E

M2  M2  m2  M2  M2  m2  M2  M2  M2

Minor Second (m2)  EF, BC
Major Second (M2)  CB, DE, FG, GA, AB
Minor Third (m3)  DF, EC, AD, BD
Major Third (M2)  CE, FA, GB
Perfect Fourth (F4)  CF, DG, EA, GC, AD, BE
Tritone (TT)  FB

Figure 6: Shows the pattern of major seconds (M2) and minor seconds (m2) between successive tones in the diatomic scale: M2, M2, m2, M2, M2, M2, m2. The pattern is shown with reference to the tonic of C. The figure lists the intervals of each tone contained in the diatomic scale.

The first hypothesis is:

Intervallic-Rivalry 1 (Primacy): In evaluating rival candidates for the tonic, listeners are biased to assume that the first tone in a musical event is the tonal center, until a better candidate replaces it.

This hypothesis predicts that the first tone sounded will be interpreted as the tonic. In other words, listeners will assume the key in which the first tone is the tonic. The model does not specify the conditions that require a shift to a different tonic. One possibility is that a new tonic is chosen if a tone is sounded that is not in the diatomic scale of the first tone (this is the assumption of the keyfinding algorithm of Longuet-Higgins and Steedman, 1971, for example). A final issue concerns the phrase “until a better candidate replaces it.” It is unclear whether or not the model assumes that the alternative tonic needs to be sounded before it replaces the initial tone. These issues will be addressed by the present data.

The second hypothesis is:

Intervallic-Rivalry 2 (Rare Intervals): In finally determining a tonal center, listeners rely more on rarer than on common intervals among pitches, those that unambiguously correlate with a single diatomic set, because they provide the more reliable key information.

When only three tones are sounded, as in the present experiment, the only case that results in a single diatomic scale is when the three tones contain a tritone. For example, suppose the tritone consists of the tones C and F#/Gb. If the third tone is any one of the tones G, D, A, E, or B, the key must be C major if the third tone is one of the remaining tones, F, A#/Bb, D#/Eb, G#/Ab, or C#/Db, the key must be C# major (or equivalently, in equal-tempered tuning, Db major). For the minor second, no third tone (other than one forming a tritone with one of the tones) results in a single diatomic scale.

The third hypothesis is:

Intervallic-Rivalry 3 (Temporal Order): In relying on rarer intervals, listeners are more accurate in detecting a correlation between a rare interval and the key of the musical event containing it when the pitches that outline the rare interval appear in a temporal order implying goal-oriented harmonic motions commonly encountered in tonal music.

Recall the tritone is the only rare interval that, with the addition of a third tone, specifies a single key. For this interval, the goal-oriented harmonic motion referred to contains the fourth scale tone followed by the seventh scale tone (Brown et al., 1994, p. 375). Thus, the tonal implication of a tritone is hypothesized to be stronger for the key in which it appears in this order (fourth degree followed by the seventh degree) rather than the reverse (seventh degree followed by the fourth degree). For the tritone C F#/Gb, for example, the implication for G major should be stronger than the implication for C#/Db major. Detailed predictions of each of these three hypotheses will be tested with the experimental data.

Method

Subjects. Sixteen members of the Cornell University community were paid $7 for their participation. The subjects were all experienced musically. They had taken an average of 9.7 years of vocal or instrumental instruction, and had participated in musical activities for an average of 17.4 years. All but two were currently involved in some musical activity, and all but two had at least one course in music theory. None reported absolute pitch.

Apparatus. Stimuli were programmed on a Macintosh IICX computer using the MAX software. The computer was connected through an Apple MIDI interface to a Yamaha TX816 FM (frequency modulation) tone generator. The stimuli were presented with a Yamaha Power amplifier (P2150) and a Yamaha 1204 MC series mixing console through a single JBL Model 4312A loudspeaker at a comfortable listening level. Listeners recorded their responses by moving and clicking on the mouse of the computer.

Stimulus materials. Each trial consisted of three consecutive tones sounded with the timbre of a piano. The first two tones were the context interval, the third was the continuation tone. The inter-onset interval between the first and second tones was 700 msec; the inter-onset interval between the second and third tones was 1400 msec. All tones were 600 msec in duration. The context
The key to the strong correlation for each context interval is shown.

The next step is to assess the influence of other factors that may contribute to the correlation. This can be done using a correlation matrix, which shows the correlation coefficients between all pairs of variables. The correlation matrix is calculated by dividing the covariance of each pair of variables by the product of their standard deviations. The correlation coefficients range from -1 to 1, with values close to 1 indicating a strong positive correlation, values close to -1 indicating a strong negative correlation, and values close to 0 indicating no correlation.

In this case, the correlation matrix shows that there is a strong positive correlation between the number of social media posts and the number of website visits. This suggests that increasing the number of social media posts is likely to increase website traffic. However, the correlation matrix also shows that the correlation between the number of social media posts and the number of email subscriptions is very weak, indicating that increasing social media activity is unlikely to increase email subscriptions.

In conclusion, the correlation analysis provides valuable insights into the relationships between different variables. However, it is important to remember that correlation does not imply causation, and further analysis is needed to determine the underlying causes of the observed correlations.

References:

The neural network consists of the primary visual cortex, the secondary visual cortex, and the association cortex. The primary visual cortex receives input from the thalamus and processes information related to visual stimuli. The secondary visual cortex receives input from the primary visual cortex and processes more complex visual information, such as object recognition. The association cortex integrates information from both the primary and secondary visual cortices and is involved in higher-level visual processing, such as spatial awareness and object identification.
The figure shows the results of a multiple regression model predicting the outcome. The model includes several predictor variables, and the coefficients indicate the magnitude and direction of their effects on the outcome. The R-squared value suggests that approximately 75% of the variance in the outcome is explained by the model. The coefficients for each predictor are statistically significant, as indicated by the p-values.
The interaction of $\psi$ and the weak interaction with the data for these weak neutral currents.

\[
C_C (e^+e^- \rightarrow \mu^+\mu^-) = 0.35 \quad \text{and} \quad C_{\mu} (e^+e^- \rightarrow e^+e^-) = 0.25
\]

The angular correlation between the weak currents was studied in the context of the data for these currents. The angular dependence of the correlation coefficients was measured and showed a significant deviation from the expected values, indicating a possible violation of the weak isospin symmetry.

The experimental results were compared with theoretical predictions, and the agreement was found to be within the expected statistical fluctuations. The branching ratios for the weak decay processes were also measured, providing further evidence for the existence of the weak neutral currents.

In conclusion, the study of the weak neutral currents has provided valuable insights into the structure of the weak interactions and the fundamental symmetries of particle physics. The results have implications for the understanding of the electroweak gauge symmetry and the search for new physics beyond the Standard Model.
To return to the intuitive, one advantage of the comparative sampling of

longer or shorter excerpts is that a minimum of procedural information is

lost in time at the point of entry. The accommodation and processing of

the excerpts have been ordered in the context of the 20-second musical

presentation. The C and D excerpts, which were processed for comparison with the target

excerpts, are shown in Figure 2. The panels show the mean for each excerpt in the context of

the musical presentation. The C excerpts, shown in Figure 2, were found to be the most

productive in the context of the 20-second musical presentation. The D excerpts, shown in

Figure 3, were found to be the second most productive in the context of the 20-second

musical presentation. The C excerpts showed the highest level of interaction with the musical

presentation, while the D excerpts showed the lowest level of interaction with the musical

presentation.
The effects of consumption on the consumer's future happiness and satisfaction have been extensively studied. The concept of the "happiness paradox" suggests that people tend to underestimate the long-term effects of their current consumption decisions. This study aims to explore this relationship further. 

The research was based on a survey conducted among a random sample of 1000 participants. The participants were asked to rate their overall life satisfaction and the amount they had spent on various categories of goods and services in the past year. The results showed a strong correlation between higher consumption and lower life satisfaction. 

The findings suggest that individuals may be overestimating the direct benefits of consumption and underestimating the long-term costs. The study also highlights the importance of considering the indirect effects of consumption, such as environmental and social impacts. 

In conclusion, the study provides evidence that consumption can indeed have a negative impact on happiness and satisfaction. This has important implications for both individuals and policy makers. It is crucial to promote mindful consumption practices that prioritize long-term well-being over short-term gratification.
The results shown in the present study are consistent with the findings of several previous studies. The present study confirms the existence of a significant relationship between the independent variable, X, and the dependent variable, Y, as hypothesized in the introduction. The regression analysis revealed a strong positive correlation between the two variables, with a coefficient of determination (R²) of 0.85. This indicates that 85% of the variation in Y can be explained by the variation in X. The significance level (p-value) for the regression coefficient was 0.001, which is well below the conventional threshold of 0.05, further supporting the reliability of the findings.

The results are also in line with the theoretical framework presented in the literature review, which posits that X and Y are causally related. The present study provides empirical evidence to support this hypothesis. The results further suggest that the implementation of intervention strategies aimed at reducing variable X could have a substantial impact on variable Y, thereby addressing the underlying issue.

In conclusion, the findings of the present study contribute to the existing body of knowledge in the field and provide practical implications for policymakers and practitioners. The study highlights the importance of further research to explore the underlying mechanisms and potential moderating factors that may influence the relationship between X and Y. The findings also open up avenues for future investigations that could extend the scope of the current study and contribute to the development of more effective strategies for addressing the issue at hand.

The implications of these findings extend beyond the immediate context of the study and have broader applications in various domains, including health, education, and social policy. The results are expected to guide the formulation of evidence-based policies and interventions, aiming to optimize outcomes and improve the quality of life for affected populations. The study's contribution to the field of research is significant, as it advances our understanding of the complex interactions between X and Y and paves the way for future innovations in related areas.

In summary, the present study provides a robust foundation for further research and demonstrates the potential for meaningful impact in real-world applications. The findings underscore the importance of interdisciplinary collaborations and highlight the value of rigorous empirical research in addressing pressing social issues. The study's contributions are expected to inspire new lines of inquiry and inform the development of targeted strategies that can effectively address the challenges at hand.

Overall, the results of the present study offer a compelling case for the implementation of targeted interventions aimed at mitigating the effects of X and optimizing the outcomes of Y. The findings underscore the potential for transformative impact and encourage ongoing investments in research and policy development to address the underlying issues and create a more equitable and sustainable future.
Introduction

The present paper explores the implications of a novel model of musical cognition, the Interference-Correction Model (ICM). The ICM proposes that musical cognition involves a dynamic interplay between encoding and decoding processes, where interference from previous representations is corrected before new information is encoded. This model is derived from research in cognitive neuroscience, specifically the interference paradigm used in various cognitive tasks.

The ICM suggests that musical processing involves a series of steps: encoding, storage, and retrieval. In the encoding stage, musical information is transformed into a mental representation. During storage, this representation is subject to interference from previously encoded information. Retrieval involves accessing the stored representation, which may be disrupted by interference. The ICM posits that successful retrieval depends on the ability to correct for these interfering representations.

The ICM has been supported by empirical evidence from various studies, including those that manipulate interference and measure retrieval performance. The model also provides a framework for understanding the effects of various factors on musical cognition, such as musical training, age, and task complexity.

Future research should aim to further validate the ICM through additional empirical studies. By doing so, we can gain a deeper understanding of how musical cognition operates and how it can be optimized for better performance.
Table 1

| Table 4 | Table 2 |

**Table 1**

| Scale that Contains Intervals | Table 4 |

**Table 2**

| Table 3 | Table 4 |

**Table 3**

| Multiple Regression of the Eight Variable Model | Table 4 |

**Table 4**

| Multiple Regression of the Eight Variable Model with Previous Models | Table 4 |

**Table 4**

| Multiple Regression of the Eight Variable Models with Previous Models | Table 4 |

**Table 4**

| Multiple Regression of the Eight Variable Models with Previous Models | Table 4 |

**Table 4**

| Multiple Regression of the Eight Variable Models with Previous Models | Table 4 |

**Table 4**

| Multiple Regression of the Eight Variable Models with Previous Models | Table 4 |