

# The Oxford Handbook of Music Psychology

by Susan Hallam, Ian Cross, and Michael Thaut

Audio (MP3) version: [https://books.kim/mp3/book/www.books.kim\\_953\\_summary-The\\_Oxford\\_Handbook\\_.mp3](https://books.kim/mp3/book/www.books.kim_953_summary-The_Oxford_Handbook_.mp3)

## Summary:

The Oxford Handbook of Music Psychology is an authoritative and comprehensive guide to the field of music psychology. Written by three leading experts in the field, Susan Hallam, Ian Cross, and Michael Thaut, this book provides a comprehensive overview of the current state of research in music psychology. It covers topics such as musical development across the lifespan; cognitive processes involved in listening to and performing music; emotion and affective responses to music; social aspects of musical behavior; neuroscience approaches to understanding how we process music; applications for health and well-being; technology-mediated learning environments for musicianship skills development.

The first part of the book focuses on developmental issues related to musicality from infancy through adulthood. It examines how children learn about rhythm, melody, harmony, timbre/texture/formal structure, improvisation/composition/arrangement styles as they grow up. The authors discuss various theories that have been proposed regarding why some people are more musically inclined than others (e.g., genetic predispositions). They also explore how different cultures shape our perception and appreciation of music.

In Part II: Cognitive Processes Involved in Listening To And Performing Music ,the authors examine various psychological processes associated with perceiving or creating sound including attentional focus on particular elements within a piece or performance context (e.g., pitch), memory formation during rehearsal or performance activities (e.g., working memory), decision making when selecting repertoire pieces or improvising solos (e.g., problem solving). They also consider recent advances in computer modeling techniques which can be used to simulate human cognition while playing instruments.

Part III: Emotion And Affective Responses To Music looks at how emotions influence our experience with music both consciously and unconsciously – from physiological arousal reactions triggered by certain types of sounds or rhythms all the way through complex emotional states evoked by entire compositions or performances . This section includes discussions on topics such as cross-cultural differences in emotional expression via musical means , gender differences ,and individual preferences for certain genres .

Part IV: Social Aspects Of Musical Behavior explores ways that individuals interact with each other musically – whether it's jamming together at home , collaborating professionally within ensembles ,or engaging online communities around shared interests . This section considers factors like group dynamics , leadership roles within bands / orchestras / choirs etc .</P >

<P >Part V : Neuroscience Approaches To Understanding How We Process Music delves into brain imaging studies which have revealed insights into neural networks responsible for processing auditory information as well as motor control systems involved when playing instruments . Additionally this section discusses potential implications these findings may have for clinical interventions involving neurological disorders such as autism spectrum disorder.</P >

<P >Finally Part VI : Applications For Health And Well Being looks at ways that researchers are using evidence based approaches derived from scientific study results to develop programs aimed at improving physical health outcomes through engagement with active forms of creative arts therapies like drumming circles dance classes etc .. Additionally this chapter reviews literature examining effects on mental wellbeing resulting from participation in recreational activities like singing karaoke attending concerts etc ..</P >

## Main ideas:

### **#1. *Music Perception: Music perception is the process of recognizing and interpreting musical sounds. It involves the integration of auditory, cognitive, and motor processes to create a meaningful experience.***

Music perception is a complex process that involves the integration of auditory, cognitive, and motor processes. It begins with the recognition of sound waves as they enter our ears and travel to our brains. Our brains then interpret these sounds in terms of pitch, rhythm, timbre, texture, dynamics, and other musical elements. This interpretation allows us to recognize familiar melodies or create new ones.

The ability to perceive music also requires an understanding of how different musical elements interact with each other. For example, we can identify a particular chord progression by recognizing how its individual notes fit together harmonically. Similarly, we can distinguish between two pieces of music based on their rhythmic patterns or melodic contours.

Finally, music perception also involves motor processes such as singing along with a song or playing an instrument. These activities require us to coordinate our movements in order to produce desired sounds and rhythms accurately. By engaging both auditory and motor skills simultaneously while listening to music we are able to gain a deeper appreciation for it.

### **#2. *Music Cognition: Music cognition is the study of how people think about, remember, and understand music. It involves the use of cognitive processes such as memory, attention, and problem-solving to interpret musical information.***

Music cognition is an interdisciplinary field of study that examines how people perceive, remember, and understand music. It draws on a variety of cognitive processes such as memory, attention, problem-solving, and decision-making to interpret musical information. Music cognition research has revealed the ways in which our brains process musical information differently than other types of sensory input. For example, studies have shown that we are able to recognize familiar melodies even when they are presented out of context or with different instrumentation.

In addition to exploring how we process music perceptually and cognitively, music cognition also investigates the psychological effects of listening to music. Research has demonstrated that certain types of music can evoke strong emotional responses from listeners and influence their behavior in various ways. Studies have also found links between musical preferences and personality traits such as openness to experience or extraversion.

The field of music cognition continues to grow rapidly as researchers explore new questions about how humans interact with this unique form of artistry. By understanding more about the way our brains respond to sound and rhythm patterns in songs, scientists hope to gain insight into why some pieces move us so deeply while others leave us feeling indifferent.

### **#3. *Music Performance: Music performance is the process of creating and interpreting music through physical and psychological processes. It involves the use of motor skills, cognitive processes, and emotional responses to create a musical experience.***

Music performance is a complex process that involves the use of physical and psychological processes to create and interpret music. It requires the coordination of motor skills, cognitive processes, and emotional responses in order to produce a musical experience. Motor skills are used to play instruments or sing, while cognitive processes involve understanding musical notation, interpreting rhythms and melodies, and making decisions about how to perform a piece. Emotional responses can be expressed through facial expressions or body language as well as through vocal expression.

The performer must also consider the audience when performing music; they must take into account their reactions in

order to create an engaging performance. This includes considering factors such as tempo, dynamics (volume), articulation (how notes are played), phrasing (the way phrases are shaped) and interpretation (how performers express emotion). All these elements combine together to form an overall musical experience for both performer and listener.

**#4. *Music Therapy: Music therapy is the use of music to promote physical, psychological, and social well-being. It involves the use of music to address physical, emotional, and cognitive needs.***

Music therapy is a form of psychotherapy that uses music to help individuals achieve their therapeutic goals. It can be used to address physical, emotional, cognitive, and social needs. Music therapists use musical activities such as improvisation, songwriting, listening to music, playing instruments or singing in order to facilitate communication and expression of feelings. Music therapy has been found to be effective in treating a variety of conditions including depression, anxiety disorders, autism spectrum disorder (ASD), dementia and Alzheimer's disease.

The goal of music therapy is not only for the individual receiving treatment but also for those around them. Through the use of music-based interventions such as relaxation techniques or guided imagery exercises it can help reduce stress levels and improve moods while providing an outlet for creative expression. Additionally it can provide an opportunity for family members or caregivers to participate in the process by engaging with the patient through shared musical experiences.

Music therapy has been shown to have positive effects on both physical health outcomes such as pain management and psychological well-being including improved self-esteem and reduced symptoms associated with mental illness. Research suggests that it may even have beneficial effects on neurological functioning due its ability to stimulate areas of the brain involved in emotion regulation.

**#5. *Music Education: Music education is the study of music and its use in teaching and learning. It involves the use of music to develop musical skills, knowledge, and understanding.***

Music education is an important part of any child's development. It helps to foster creativity, self-expression, and critical thinking skills. Music can also be used as a tool for teaching other subjects such as math or science. Through music education, children learn about the history and culture of different musical styles and genres, which can help them gain a better understanding of their own cultural heritage.

In addition to providing students with knowledge about music theory and composition, music education also encourages collaboration between students in order to create meaningful pieces of art. This type of learning environment allows students to develop social skills that will benefit them throughout their lives. Furthermore, it provides an opportunity for students to explore their creative potential while developing discipline and focus.

Music education has been shown to have positive effects on academic performance in areas such as reading comprehension and mathematics scores. Additionally, research suggests that exposure to music may improve cognitive abilities such as memory recall and problem solving skills. Finally, studies have found that participation in school band programs can lead to improved self-esteem among adolescents.

**#6. *Music Technology: Music technology is the use of technology to create, manipulate, and store music. It involves the use of digital tools and techniques to create, record, and distribute music.***

Music technology has revolutionized the way music is created, recorded, and distributed. It has enabled musicians to create complex musical compositions with a wide range of sounds and textures. Digital tools such as synthesizers, samplers, sequencers, and digital audio workstations allow for unprecedented levels of control over sound production. Music can be manipulated in ways that were not possible before the advent of digital technology.

The use of music technology also allows for greater flexibility when it comes to recording and distributing music. Digital recordings can be easily edited or mixed together to create new versions or remixes of existing songs. This makes it

easier than ever before for artists to share their creations with a wider audience.

Finally, advances in music technology have made it easier than ever before for people to access and enjoy music from around the world. Streaming services like Spotify make millions of tracks available at any time on any device – allowing listeners everywhere to explore different genres and styles without having to purchase physical copies.

**#7. *Music and the Brain: Music and the brain is the study of how music affects the brain and how the brain processes music. It involves the use of neuroscience to understand the neural mechanisms underlying music perception and production.***

Music and the brain is an area of research that has seen a great deal of growth in recent years. It involves the use of neuroscience to understand how music affects our brains, as well as how our brains process music. This field looks at both the cognitive and emotional aspects of music, exploring topics such as musical memory, emotion recognition, creativity, and more. Research into this area has revealed fascinating insights into how we perceive and interact with music.

The neural mechanisms underlying music perception are complex but can be broken down into two main categories: auditory processing (the way we hear sound) and motor control (how we move when listening to or playing music). Auditory processing includes recognizing pitch patterns, understanding rhythmical structures, detecting timbre changes in instruments or voices, etc., while motor control involves coordinating movements for singing or playing an instrument. Both processes involve multiple areas of the brain working together.

In addition to these basic processes involved in perceiving and producing music there are also higher-level functions related to musical cognition such as understanding lyrics or interpreting musical structure. These higher-level functions require further study using techniques such as functional magnetic resonance imaging (fMRI), which allows researchers to observe activity within specific regions of the brain during different tasks.

Overall it is clear that there is much still left to learn about Music and the Brain; however current research provides us with valuable insight into how our brains process this unique form of communication. As technology continues to advance so too will our knowledge on this topic allowing us greater understanding on why certain pieces evoke strong emotions from listeners.

**#8. *Music and Emotion: Music and emotion is the study of how music affects emotions and how emotions affect music. It involves the use of psychological and physiological processes to understand the relationship between music and emotion.***

Music and emotion is a fascinating area of study, as it explores the complex relationship between music and our emotions. Music has been used for centuries to evoke strong emotional responses in people, from joyous celebration to sorrowful mourning. It can also be used to express feelings that are difficult or impossible to put into words. The power of music lies in its ability to tap into our deepest emotions and create an emotional connection with us.

The psychological processes involved in understanding the relationship between music and emotion involve both cognitive (thinking) processes such as memory recall, attention, perception, categorization, evaluation; and affective (feeling) processes such as arousal, pleasure/displeasure reactions. Physiological processes include changes in heart rate, respiration rate, skin conductance level (SCL), galvanic skin response (GSR), muscle tension etc., which can all be measured when listening to different types of music.

Research on this topic has revealed that certain musical elements such as tempo, rhythm patterns or harmonic progressions have a direct effect on how we feel emotionally while listening. For example faster tempos tend to increase arousal levels whereas slower tempos tend to decrease them. Similarly major key melodies are often associated with positive emotions while minor key melodies are more likely linked with negative ones.

Overall research suggests that there is a strong link between music and emotion – one which is deeply rooted within us all – but further research needs to be done before any definitive conclusions can be drawn about the exact nature of this relationship.

**#9. *Music and Health: Music and health is the study of how music affects physical and mental health. It involves the use of music to promote physical and mental health, as well as to treat physical and mental illnesses.***

Music and health is a rapidly growing field of research, with studies showing that music can have positive effects on physical and mental health. Music has been used to reduce stress, improve mood, increase relaxation, enhance cognitive performance, reduce pain perception, and even help people recover from illness or injury. It has also been found to be beneficial in the treatment of various psychological disorders such as depression and anxiety.

The use of music for therapeutic purposes dates back centuries; however it is only recently that scientific evidence has begun to emerge demonstrating its effectiveness. Research suggests that listening to certain types of music can alter brain activity in ways which are beneficial for both physical and mental health. For example, some studies have shown that listening to classical music can lead to increased levels of serotonin – a neurotransmitter associated with feelings of wellbeing – while other studies suggest that certain musical rhythms may help synchronize neural networks involved in motor control.

In addition to its potential therapeutic benefits, there is also evidence suggesting that engaging with music through activities such as playing an instrument or singing can provide additional benefits for physical and mental health. Such activities require concentration and focus which helps build self-esteem while providing an enjoyable form of exercise at the same time.

**#10. *Music and Culture: Music and culture is the study of how music is used in different cultures and how it reflects and shapes culture. It involves the use of music to understand the cultural context of music and its influence on society.***

Music and culture are inextricably linked. Music is a powerful tool for expressing cultural identity, values, beliefs, and norms. It can be used to create social cohesion within a group or to express dissent from the status quo. Music has been used throughout history as an expression of emotion, protest, celebration, and even political power.

The study of music and culture examines how music reflects the values of different cultures around the world. It looks at how musical styles vary between cultures and how they have changed over time due to influences from other cultures. It also explores how music is used in rituals such as weddings or funerals to mark important life events.

In addition to examining the role of music in society, research into music and culture also investigates its influence on individuals' behavior. Studies have shown that certain types of music can affect people's moods or emotions; for example classical music has been found to reduce stress levels while heavy metal may increase aggression levels.

Finally, research into this area looks at how technology has impacted our relationship with music by making it more accessible than ever before through streaming services like Spotify or Apple Music. This has allowed us to explore new genres more easily than ever before but it also raises questions about whether this increased access will lead to homogenization across different cultures.

**#11. *Music and Development: Music and development is the study of how music affects the development of children and adults. It involves the use of music to understand the role of music in the development of cognitive, social, and emotional skills.***

Music and development is a fascinating field of study that examines how music can influence the growth and

development of children and adults. It looks at how music can be used to help individuals develop cognitive, social, and emotional skills. Music has been found to have an impact on language acquisition, memory formation, problem solving abilities, creativity, self-esteem, motivation levels, stress management strategies, communication skills and more.

The use of music in developmental contexts has become increasingly popular over the past few decades as research continues to demonstrate its effectiveness in helping people reach their full potential. Music therapy is one example of this type of intervention which uses musical activities such as singing or playing instruments to promote physical rehabilitation or psychological healing. Other forms of music-based interventions include using rhythm for movement coordination or improvisation for creative expression.

In addition to being used therapeutically with individuals who are struggling with certain issues related to their development (e.g., autism spectrum disorder), music can also be used proactively by parents and educators alike in order to foster healthy growth during childhood years. For instance, exposing young children to different types of musical styles may help them learn about various cultures while simultaneously developing their auditory processing skills.

Overall then it is clear that there are many ways in which music can play a role in the development process – both positively and negatively depending on how it is utilized – making it an important area for further exploration.

**#12. *Music and Language: Music and language is the study of how music and language interact. It involves the use of music to understand the relationship between music and language, and how music can be used to enhance language learning.***

Music and language are two of the most fundamental aspects of human experience. Music has been used for centuries to express emotion, communicate ideas, and create a sense of community. Language is an essential tool for communication, allowing us to share our thoughts and feelings with others. The relationship between music and language is complex; both have their own unique characteristics that can be used in combination to create powerful effects.

The study of music and language explores how these two forms interact with each other. It looks at how musical elements such as rhythm, melody, harmony, timbre, texture, form and structure can be used to enhance the understanding of spoken or written words. It also examines how music can help people learn new languages more quickly by providing a meaningful context in which they can practice their skills.

In addition to its educational benefits, research suggests that combining music with language may also improve memory recall and increase motivation levels when learning new material. Furthermore, it has been suggested that listening to certain types of music while studying may even lead to improved academic performance.

Ultimately then, the study of music and language provides insight into how we use these two forms together in order to communicate effectively with one another. By exploring this relationship further we can gain a better understanding not only about ourselves but also about those around us.

**#13. *Music and Movement: Music and movement is the study of how music affects physical movement. It involves the use of music to understand the relationship between music and movement, and how music can be used to enhance physical activity.***

Music and movement is an interdisciplinary field of study that examines the relationship between music and physical activity. It involves exploring how music can be used to enhance physical performance, as well as understanding the psychological effects of music on movement. Music has been found to have a positive effect on motor skills, coordination, balance, posture, and overall fitness levels. Additionally, research suggests that listening to certain types of music can increase motivation for exercise or sports activities.



The use of music in physical activity has become increasingly popular in recent years due to its potential benefits. Studies have shown that people who listen to upbeat or motivating songs while exercising tend to perform better than those who don't listen to any type of music at all. Furthermore, it has been suggested that listening to calming or relaxing tunes during stretching exercises may help reduce muscle tension and improve flexibility.

In addition to its practical applications in sport and exercise settings, there are also many therapeutic uses for incorporating music into movement-based activities such as dance therapy or yoga classes. Research indicates that engaging with rhythmic movements while listening to specific pieces of musical works can lead not only improved physical health but also emotional wellbeing.

**#14. *Music and Creativity: Music and creativity is the study of how music affects creativity. It involves the use of music to understand the relationship between music and creativity, and how music can be used to enhance creative thinking.***

Music and creativity are closely intertwined. Music has been used for centuries to inspire creative thinking, from the ancient Greeks who believed that music could help them think more clearly, to modern day musicians who use it as a tool for self-expression. Studies have shown that listening to music can increase creativity by helping people access their subconscious thoughts and feelings. It can also provide an emotional outlet, allowing people to express themselves in ways they may not be able to do with words alone.

The relationship between music and creativity is complex and multi-faceted. Different types of music can evoke different emotions or ideas in listeners, which can then lead to creative solutions or new perspectives on problems. Music can also act as a form of meditation, providing a space for reflection and contemplation which allows the mind to wander freely without distraction.

In addition, research suggests that certain musical elements such as rhythm or tempo may influence how we process information and generate ideas. For example, faster tempos tend to stimulate activity in the brain's left hemisphere while slower tempos activate the right hemisphere – both areas associated with creative thought processes.

Ultimately, understanding how music affects our ability to create is essential if we want to maximize its potential benefits. By exploring this connection further through research studies and personal experimentation we will gain insight into how best utilize this powerful tool for enhancing our own creativity.

**#15. *Music and Learning: Music and learning is the study of how music affects learning. It involves the use of music to understand the relationship between music and learning, and how music can be used to enhance learning.***

Music and learning is a fascinating area of study that has been gaining attention in recent years. It involves the use of music to understand how it can be used to enhance learning, as well as the relationship between music and learning. Music has long been known to have an effect on emotions, moods, and behavior; however, its potential for aiding in cognitive processes such as memory formation and problem solving is only now being explored.

Studies have shown that listening to certain types of music can improve performance on tasks related to language processing, mathematics, reading comprehension, creativity, concentration levels and more. Additionally, research suggests that musical training may lead to improved academic achievement across multiple subjects. This could be due to increased motivation or enhanced executive functioning skills associated with playing an instrument.

The effects of music on learning are not limited solely to those who actively participate in making it; even passive listening can influence cognition positively. Listening to classical or instrumental pieces while studying has been found by some studies to increase focus and reduce stress levels during exams or other challenging tasks.

Overall, there is much evidence suggesting that incorporating music into our lives can help us learn better – whether through active participation or simply by listening passively. As we continue exploring this field further we will gain a greater understanding of how best we can use music for educational purposes.

**#16. *Music and Memory: Music and memory is the study of how music affects memory. It involves the use of music to understand the relationship between music and memory, and how music can be used to enhance memory.***

Music and memory is a fascinating area of research that has been studied for centuries. It involves the use of music to understand how it affects our memories, both in terms of encoding new information and retrieving old memories. Music can be used to enhance memory by providing an emotional context or cueing certain memories, as well as helping us remember facts more easily. Research suggests that music can help improve recall accuracy, reduce forgetting rates, and even increase the speed at which we process information.

The study of music and memory also includes exploring how different types of music affect our ability to remember things differently. For example, some studies have found that classical music may be better suited for memorizing factual material than other genres such as rock or pop. Other studies suggest that listening to familiar songs may help people recall autobiographical details from their past more accurately than unfamiliar tunes.

In addition to its potential benefits for improving memory performance, there is evidence suggesting that engaging with musical activities can provide psychological benefits such as reducing stress levels and increasing feelings of happiness. This could explain why many people find comfort in listening to their favorite songs when they are feeling down or overwhelmed.

**#17. *Music and Attention: Music and attention is the study of how music affects attention. It involves the use of music to understand the relationship between music and attention, and how music can be used to enhance attention.***

Music and attention is an important area of research in music psychology. It involves the study of how music affects our ability to pay attention, as well as how it can be used to enhance our focus and concentration. Research has shown that certain types of music can help us stay focused on a task for longer periods of time, while other types may distract us or cause us to lose focus. Music also plays a role in helping people with ADHD manage their symptoms by providing them with an auditory stimulus that helps them concentrate.

The use of music for improving attention has been studied extensively over the years, and there are many different approaches being taken. For example, some studies have looked at using specific musical elements such as rhythm or melody to improve focus; others have examined the effects of listening to particular genres or styles; still others have explored the impact of playing instruments or singing along with songs. Additionally, researchers are looking into ways that technology can be used to create personalized soundtracks tailored specifically for individuals' needs.

Overall, research suggests that music does indeed play a role in influencing our ability to pay attention and remain focused on tasks. However, more work needs to be done before we fully understand its potential applications in this area. As technology continues to advance and new methods become available for studying these effects, we will likely gain further insight into how best we can use music as a tool for enhancing our cognitive abilities.

**#18. *Music and Imagination: Music and imagination is the study of how music affects imagination. It involves the use of music to understand the relationship between music and imagination, and how music can be used to enhance imagination.***

Music and imagination are closely intertwined. Music has the power to evoke vivid images, emotions, and memories in listeners. It can also be used as a tool for creative expression and exploration of new ideas. Research suggests that music can have a positive effect on creativity by stimulating imaginative thinking processes.



The relationship between music and imagination is complex, but it is clear that they interact with each other in powerful ways. For example, research has shown that listening to certain types of music can increase divergent thinking – the ability to come up with multiple solutions or ideas for a given problem – which is an important component of creativity.

In addition to its potential effects on creativity, music may also influence how people perceive their environment. Studies suggest that musical elements such as tempo, rhythm, melody, harmony and timbre can affect our perception of time passing more quickly or slowly than it actually does.

Finally, there is evidence that engaging with music through active participation (e.g., playing an instrument) may further enhance imagination by providing opportunities for self-expression and exploration of new ideas. This type of engagement could potentially lead to increased levels of creative output.

**#19. *Music and Aesthetics: Music and aesthetics is the study of how music affects aesthetic experience. It involves the use of music to understand the relationship between music and aesthetics, and how music can be used to enhance aesthetic experience.***

Music and aesthetics is a fascinating field of study that explores the relationship between music and aesthetic experience. It examines how music can be used to create, enhance, or even alter an individual's aesthetic experience. Music has long been known to have powerful effects on emotions, moods, and behavior; however, its influence on aesthetics has only recently begun to be explored in depth.

The study of music and aesthetics involves looking at how different musical elements such as melody, harmony, rhythm, timbre, texture and form interact with each other to create an overall aesthetic effect. Additionally it looks at how these elements are combined with visual components such as color or lighting in order to further enhance the aesthetic experience. Furthermore it investigates how certain types of music may evoke particular emotional responses from listeners which can then shape their perception of beauty.

Ultimately this research seeks to understand why some pieces of music are considered more aesthetically pleasing than others by exploring the psychological processes involved in perceiving beauty through sound. By understanding these processes we can gain insight into what makes certain pieces of music so appealing while also gaining a better appreciation for the power that music holds over our emotions.

**#20. *Music and Society: Music and society is the study of how music affects society. It involves the use of music to understand the relationship between music and society, and how music can be used to shape and influence society.***

Music and society is a complex relationship that has been studied for centuries. Music can be used to express emotions, create social bonds, and even influence political decisions. It can also be used as a tool of oppression or liberation, depending on the context in which it is used. Music has been found to have an effect on people's moods, attitudes, and behavior; it can bring people together or divide them apart.

The study of music and society involves looking at how different types of music are associated with different cultures and societies around the world. It also looks at how musical styles change over time due to changes in technology or cultural influences. Additionally, research into music and society examines how certain genres of music may affect individuals differently based on their age group or gender identity.

In recent years there has been increased interest in understanding the role that music plays in our lives today – from its use as a form of entertainment to its potential therapeutic benefits for those suffering from mental health issues such as depression or anxiety.

Ultimately, by studying the relationship between music and society we gain insight into how both shape each other over time – providing us with valuable information about ourselves as well as our culture.</p></div>