SATB

A Colourful Game of Musical Puzzles

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1 Rhythm

Time is divided up into a sequence of *beats*.

R1 Each voice can play a single colour on each beat.

R2 At least one voice must play on every beat.

2 Melody

A *melody* consists of a sequence of *prhases*. Each phrase is a sequence of colours played by a single voice that obeys the *phrasing* rules:

M1 A repeat must be followed by a step.

M2 A skip must be followed by a step in the opposite direction.

Example 1 *There are two two-beat phrases that start with R:*

$$[R \quad W] \qquad [R \quad Y]$$

and four three-beat phrases that start with R:

$$[R \quad B \quad W] \qquad [R \quad G \quad Y] \qquad [R \quad R \quad Y] \qquad [R \quad R \quad W]$$

3 Harmony

Harmony is when several different colours are played on the same beat. A *chord* is a set of colours played on the same beat by different voices that obeys the *consonance* rule:

H1 No more than two colours in a chord may be adjacent.

Example 2 *There are five one-colour chords:*

$$\begin{bmatrix}R\end{bmatrix} \quad \begin{bmatrix}W\end{bmatrix} \quad \begin{bmatrix}B\end{bmatrix} \quad \begin{bmatrix}G\end{bmatrix} \quad \begin{bmatrix}Y\end{bmatrix}$$

ten two-colour chords:

$$\begin{bmatrix}R\\W\end{bmatrix} \quad \begin{bmatrix}W\\B\end{bmatrix} \quad \begin{bmatrix}B\\G\end{bmatrix} \quad \begin{bmatrix}G\\Y\end{bmatrix} \quad \begin{bmatrix}Y\\R\end{bmatrix} \quad \begin{bmatrix}R\\B\end{bmatrix} \quad \begin{bmatrix}W\\G\end{bmatrix} \quad \begin{bmatrix}B\\Y\end{bmatrix} \quad \begin{bmatrix}R\\G\end{bmatrix} \quad \begin{bmatrix}W\\Y\end{bmatrix}$$

and five three-colour chords:

$$\begin{bmatrix}R\\G\\B\end{bmatrix} \quad \begin{bmatrix}W\\Y\\G\end{bmatrix} \quad \begin{bmatrix}B\\Y\\R\end{bmatrix} \quad \begin{bmatrix}G\\R\\W\end{bmatrix} \quad \begin{bmatrix}Y\\W\\B\end{bmatrix}$$

A three-note chord consists of two adjacent colours and a third isolated colour. This isolated colour is called the *root* of the chord.

Example 3 *R is the root of the three-note chord* $\begin{bmatrix}R\\G\\B\end{bmatrix}$

4 Counterpoint

Counterpoint is when several voices play simultaneously. A pair of voices move in *similar motion* if they both step or skip in the same direction. A pair of voices move in *contrary motion* if they step or skip in opposite directions. A pair of voices move in *oblique motion* if one voice repeats a colour while the other voice changes colours. A group of melodies played in counterpoint must satisfy the *voice leading* rules:

C1 At least one voice must move on each beat.

C2 At least on pair of voices must move in contrary or oblique motion on each beat.

Example 4 *This composition follows the rules established above:*

$$\begin{bmatrix}B & Y & G & W & B\\G & G & B & G & Y\\R & W & B & W & R\end{bmatrix}$$