

A CCG Chord Grammar v0.4

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17th June 2008

1 Background

This documents version 0.4 of the CCG grammar for Jazz Chords, originally by Mark Steedman, further developed by Mark Wilding. All of the changes from Mark Steedman's original grammar are explained in full in other documents, as listed below.

2 Grammar Changes

The following table lists the major changes made to Mark Steedman's grammar leading to the present version and the name of the document that explains the justification for the change.

Document	Changes
<i>An Alternative Cadence Semantics</i>	Correction of the cadence-raising rule.
<i>CCG Chord Grammar</i>	Optional minors in 1, 2 and 5. Coordination of tritone substitution categories (later dropped). Minor resolution of authentic steps. Major tritone substitution. Extensive review of diminished seventh interpretations.
<i>Proposed Grammar v0.3</i>	Reformulation of tritone substitutions, with and without left steps (cats 4). Related changes. Omission of some diminished seventh categories.
<i>New Notation for Optional Minors</i>	Extension of optional minor syntax to multiple codependent classes.
<i>A Modification of the 0-Categories</i>	Alteration of the categories 0a and 0b to overcome dominant seventh problems.
<i>Using Slash Modes for Cadences</i>	Introduction of the cadence slash mode to refine cadence production.

2.1 Diminished sevenths

There is only one change introduced in this grammar and not documented in the above references. I have reintroduced categories 7a, d, g and j. It was previously thought that these need not be present in the grammar, since they should not be included in annotations, but recognised by annotators as colouration. However, I have found several examples of chords that require these categories, both in John Elliott's Brick Book and in Coker's appendix examples.

3 Grammar v0.4

- 0a. $X(m) := I_X(m)/I_X(m) : \lambda x.x$
0b. $X(m)^{(7)} := I_X(m)^7/I_X(m)^7 : \lambda x.x$
1. $X(m) := I_X(m) : X$
2. $X(m) := V_X(m) \setminus V_X : \lambda x.x$
3. $X(m)^7 := I_X(m)^7 / {}_cIV_X(m)_1^7 : \lambda x.leftonto(x)$
4ab. $X(m)^7 := I_X(m)^7 / {}_cVII_X(m)_1^7 : \lambda x.tritone(leftonto(x))$
4cd. $X(m)^7 := I_X(m)^7 / {}_c{}^bV_X(m)_1^7 : \lambda x.tritone(x)$
5. $X(m) := I_X(m) / {}_cV_X(m)_1 : \lambda x.rightonto(x)$
6. $X_m := {}^bVII_X m \setminus {}^bVII_X m : \lambda x.x$
7. $X_{\circ 7} :=$ (a) $I_X(m)/I_X(m) : \lambda x.x$
(b) ${}^bV_X(m)^7 / VII_X(m)^7 : \lambda x.leftonto(x)$
(c) $IV_X(m)^7 / {}^bVII_X(m)^7 : \lambda x.leftonto(x)$
(d) $VI_X(m) / VI_X(m) : \lambda x.x$
(g) ${}^bV_X(m) / {}^bV_X(m) : \lambda x.x$
(j) ${}^bIII_X(m) / {}^bIII_X(m) : \lambda x.x$
(k) $VI_X(m)^7 / III_X(m)^7 : \lambda x.leftonto(x)$
(l) ${}^bVI_X(m)^7 / {}^bIII_X(m)^7 : \lambda x.leftonto(x)$