

the other is for deriving a compound *of* the specified sort. The former are **elimination** rules. A sentence derived by an elimination rule may have a main connective other than that after which the rule is named, or no main connective. The latter are **introduction** rules, so called because they *yield* an *SL* sentence whose main connective is the one after which the rule is named. Some of these ten rules make use of **subderivations**. We first present the rules that *do not* use subderivations.

5.1.1 THE NON-SUBDERIVATION RULES OF SD

The derivation rules that do not make use of subderivations are

Reiteration (R)

$$\begin{array}{|l} \mathbf{P} \\ \hline \triangleright \mathbf{P} \end{array}$$

Conjunction Elimination (&E)

$$\begin{array}{|l} \mathbf{P \& Q} \\ \hline \triangleright \mathbf{P} \end{array} \quad \begin{array}{|l} \mathbf{P \& Q} \\ \hline \triangleright \mathbf{Q} \end{array}$$

Conjunction Introduction (&I)

$$\begin{array}{|l} \mathbf{P} \\ \mathbf{Q} \\ \hline \triangleright \mathbf{P \& Q} \end{array}$$

Disjunction Introduction (\vee I)

$$\begin{array}{|l} \mathbf{P} \\ \hline \triangleright \mathbf{P \vee Q} \end{array} \quad \begin{array}{|l} \mathbf{P} \\ \hline \triangleright \mathbf{Q \vee P} \end{array}$$

Conditional Elimination (\supset E)

$$\begin{array}{|l} \mathbf{P \supset Q} \\ \mathbf{P} \\ \hline \triangleright \mathbf{Q} \end{array}$$

Biconditional Elimination (\equiv E)

$$\begin{array}{|l} \mathbf{P \equiv Q} \\ \mathbf{P} \\ \hline \triangleright \mathbf{Q} \end{array} \quad \begin{array}{|l} \mathbf{P \equiv Q} \\ \mathbf{Q} \\ \hline \triangleright \mathbf{P} \end{array}$$

These rules are all quite straightforward. The abbreviation for each rule is given in parentheses following the rule name. In each case the sentence the ‘ \triangleright ’ symbol points to can be derived if the one or two sentences occurring above it have already been derived. Some of these rules have two versions.

Conjunction Elimination specifies that if a conjunction occurs on an earlier line of a derivation then we may enter on a subsequent line either the left conjunct or the right conjunct of the conjunction.