# A Proof from PROTEIN*

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**Abstract**

This is just an experiment.

**Axiom 0.1 ( The transitivity of $\sigma$)** $\sigma(A,B) \wedge \sigma(B,C) \rightarrow \sigma(A,C)$.

**Axiom 0.2 ( The transitivity of $\rho$)** $\rho(A,B) \wedge \rho(B,C) \rightarrow \rho(A,C)$.

**Axiom 0.3 ( The symmetry of $\rho$)** $\rho(A,B) \rightarrow \rho(B,A)$.

**Axiom 0.4 (The fact that any two things are either related in the $\sigma$ or in the $\rho$ manner )** $\sigma(A,B) \vee \rho(A,B)$.

**Axiom 0.5 (The partiality of $\rho$)** $\neg\ \rho(c,d)$.

**Theorem 0.1** $\sigma(a,b)$.

Proof[1]. We show directly that

$$\sigma(a,b). \tag{1}$$

We show indirectly that

$$\sigma(a,d). \tag{2}$$

Let us assume that

$$\neg\ \sigma(a,d). \tag{3}$$

We show indirectly that

$$\neg\ \rho(a,c). \tag{4}$$

Let us assume that

$$\rho(a,c). \tag{5}$$

Hence by the symmetry of $\rho$ $\rho(c,a)$. Hence by the transitivity of $\rho$ and by the partiality of $\rho$ $\neg\ \rho(a,d)$. By (3) and by the fact that any two things are

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[1] PROTEIN

either related in the $\sigma$ or in the $\rho$ manner $\rho(a,d)$. Therefore by the transitivity of $\rho$ $\rho(c,d)$. Therefore by the transitivity of $\rho$ $\neg$ $\rho(a,c)$. This contradicts (5). Thus we have completed the proof of (4).

Hence by the fact that any two things are either related in the $\sigma$ or in the $\rho$ manner $\sigma(a,c)$. Because of the fact that any two things are either related in the $\sigma$ or in the $\rho$ manner and by the partiality of $\rho$ $\sigma(c,d)$. Therefore by the transitivity of $\sigma$ $\sigma(a,d)$. This contradicts (3). Thus we have completed the proof of (2).

We show indirectly that

$$\sigma(d,b). \tag{6}$$

Let us assume that

$$\neg\ \sigma(d,b). \tag{7}$$

We show indirectly that

$$\neg\ \rho(d,c). \tag{8}$$

Let us assume that

$$\rho(d,c). \tag{9}$$

Hence by the symmetry of $\rho$ $\rho(c,d)$. Hence by the transitivity of $\rho$ and by the partiality of $\rho$ $\neg$ $\rho(d,d)$. Therefore by the transitivity of $\rho$ $\neg$ $\rho(d,c)$. This contradicts (9). Thus we have completed the proof of (8).

Hence by the fact that any two things are either related in the $\sigma$ or in the $\rho$ manner

$$\sigma(d,c). \tag{10}$$

By (7) and by the fact that any two things are either related in the $\sigma$ or in the $\rho$ manner $\rho(d,b)$. Hence by the symmetry of $\rho$ $\rho(b,d)$. Hence by the transitivity of $\rho$ and by the partiality of $\rho$ $\neg$ $\rho(c,b)$. Hence by the fact that any two things are either related in the $\sigma$ or in the $\rho$ manner $\sigma(c,b)$. Hence by the transitivity of $\sigma$ and by (10) $\sigma(d,b)$. This contradicts (7). Thus we have completed the proof of (6).

Hence by the transitivity of $\sigma$ and since $\sigma(a,d)$ $\sigma(a,b)$. Thus we have completed the proof of (1).

q.e.d.