A Proof from PROTEIN*

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Abstract

This is just an experiment.

Axiom 0.1 ($axiom(2)$) $\neg$ *A is an animal* $\rightarrow \neg$ *A is a wolf.*

Axiom 0.2 ($axiom(4)$) $\neg$ *A is an animal* $\rightarrow \neg$ *A is a fox.*

Axiom 0.3 ($axiom(6)$) $\neg$ *A is an animal* $\rightarrow \neg$ *A is a bird.*

Axiom 0.4 ($axiom(10)$) $\neg$ *A is an animal* $\rightarrow \neg$ *A is a snail.*

Axiom 0.5 ($wolf$ **named Isegrim**) $\neg$ *Isegrim is a wolf* $\rightarrow false$.

Axiom 0.6 (fox **named Reinecke**) $\neg$ *Reinecke is a fox* $\rightarrow false$.

Axiom 0.7 ($bird$ **named Daffy Duck**) $\neg$ *Daffy Duck is a bird* $\rightarrow false$.

Axiom 0.8 ($caterpillar$ **named Kathy**) $\neg$ *Kathy is a caterpillar* $\rightarrow false$.

Axiom 0.9 ($snail$ **named Snaily**) $\neg$ *Snaily is a snail* $\rightarrow false$.

Axiom 0.10 ($grain$ **named corn**) $\neg$ *corn is a grain* $\rightarrow false$.

Axiom 0.11 ($axiom(18)$) $\neg$ *A is a plant* $\rightarrow \neg$ *A is a grain.*

Axiom 0.12 ($axiom(28)$) $\neg$ *A is much smaller than Daffy Duck* $\rightarrow \neg$ *A is a snail.*

Axiom 0.13 ($axiom(33)$) $\neg$ *A is much smaller than Reinecke* $\rightarrow \neg$ *A is a bird.*

Axiom 0.14 ($axiom(38)$) $\neg$ *A is much smaller than Isegrim* $\rightarrow \neg$ *A is a fox.*

Axiom 0.15 ($axiom(42)$) *Isegrim eats Reinecke* $\rightarrow false$.

Axiom 0.16 ($axiom(46)$) *Isegrim eats corn* $\rightarrow false$.

Axiom 0.17 ($axiom(55)$) *Daffy Duck eats Snaily* $\rightarrow false$.

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Axiom 0.18 (The eating habits of animals) *A is an animal $\wedge$ B is a plant $\wedge$ C is an animal $\wedge$ D is a plant $\wedge$ C is much smaller than A $\wedge$ C eats D $\rightarrow$ (A eats B $\vee$ A eats C).*

Axiom 0.19 (The fact that caterpillar food is a plant) *A is a caterpillar $\rightarrow$ food of the caterpillar A is a plant.*

Axiom 0.20 (The fact that snail food is a plant) *A is a snail $\rightarrow$ food of the snail A is a plant.*

Axiom 0.21 (The fact that snails eat snail food) *A is a snail $\rightarrow$ A eats food of the snail A.*

Theorem 0.1 *$\exists(x_1, x_2, x_3)$ (x_1 is an animal$\wedge x_2$ is an animal$\wedge x_3$ is a grain$\wedge$ x_1 eats $x_2 \wedge x_2$ eats x_3).*

Proof[1]. We show directly that

$$\exists(x_1, x_2, x_3)\ (x_1 \text{ is an animal} \wedge x_2 \text{ is an animal} \wedge \\ x_3 \text{ is a grain} \wedge x_1 \text{ eats } x_2 \wedge x_2 \text{ eats } x_3). \tag{1}$$

Because of fox named Reinecke Reinecke is a fox. Hence by $axiom(4)$ Reinecke is an animal. Because of $bird$ named Daffy Duck Daffy Duck is a bird. Hence by $axiom(6)$ Daffy Duck is an animal. Because of $grain$ named corn

$$\text{corn is a grain.} \tag{2}$$

Because of $axiom(46)$

$$\text{Isegrim does not eat corn.} \tag{3}$$

Because of $axiom(42)$

$$\text{Isegrim does not eat Reinecke.} \tag{4}$$

Because of $wolf$ named Isegrim Isegrim is a wolf. Hence by $axiom(2)$

$$\text{Isegrim is an animal.} \tag{5}$$

By (2) and by $axiom(18)$

$$\text{corn is a plant.} \tag{6}$$

Because of *caterpillar* named Kathy Kathy is a caterpillar. Hence by the fact that caterpillar food is a plant

$$\text{food of the caterpillar Kathy is a plant.} \tag{7}$$

Because of $axiom(38)$ and since Reinecke is a fox Reinecke is much smaller than Isegrim. Therefore by the eating habits of animals, (3), (4), (5), and by (6) and since Reinecke is an animal

$$\text{Reinecke does not eat food of the caterpillar Kathy.} \tag{8}$$

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Because of $axiom(33)$ and since Daffy Duck is a bird Daffy Duck is much smaller than Reinecke. Because of $axiom(55)$

$$\text{Daffy Duck does not eat Snaily.} \tag{9}$$

Because of *snail* named Snaily

$$\text{Snaily is a snail.} \tag{10}$$

Hence by $axiom(10)$

$$\text{Snaily is an animal.} \tag{11}$$

Therefore by the fact that snail food is a plant

$$\text{food of the snail Snaily is a plant.} \tag{12}$$

Therefore by $axiom(28)$

$$\text{Snaily is much smaller than Daffy Duck.} \tag{13}$$

By (10) and by the fact that snails eat snail food Snaily eats food of the snail Snaily. Therefore by the eating habits of animals, (9), (7), and by (11) and since Daffy Duck is an animal Daffy Duck eats food of the caterpillar Kathy. Hence by the eating habits of animals, (8), and by (7) and since Reinecke is an animal, Daffy Duck is an animal, and Daffy Duck is much smaller than Reinecke

$$\text{Reinecke eats Daffy Duck.} \tag{14}$$

Therefore by the eating habits of animals, (9), (11), (12), and by (13) and since Daffy Duck is an animal and corn is a plant Daffy Duck eats corn. Hence by (14) and since Reinecke is an animal, Daffy Duck is an animal, and corn is a grain we have completed the proof of (1).

q.e.d.