An Erratum for Some Errata to ATP Problems

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In 1986 Pelletier published (Pelletier, 1986) an annotated list of 75 logic problems for testing ATP systems. The problems are presented in a natural first order form (FOF) and most of them are also given in an equivalent negated conclusion clause normal form (CNF). The CNF versions are available in the TPTP Problem Library (Sutcliffe et al., 1994). Shortly after the publication of (Pelletier, 1986) some errata were published (Pelletier, 1988). In particular, Problem 62 was 'corrected'. Recently, however, is has been discovered that both the CNF and FOF versions of Problem 62 in (Pelletier, 1988) are incorrect (although the FOF, unlike the CNF, is still a theorem). The correct version of Problem 62 is (following the format of (Pelletier, 1986)):

Natural FOF	**Negated Conclusion CNF**
$(Ax)[(Pa\&(Px \rightarrow Pf(x))) \rightarrow Pf(f(x))]$	Pa
$\leftrightarrow$	$Px + Pf(f(x)) + \neg Pa$
$(Ax)[(\neg Pa + Px + Pf(f(x)))\&$	$Pf(f(x)) + \neg Pa + \neg Pf(x)$
$(\neg Pa + \neg Pf(x) + Pf(f(x)))]$	$\neg Pf(f(sk1)) + \neg Pf(f(sk2))$
	$Pf(sk1) + Pf(sk2) + \neg Psk1 + \neg Psk2$
	$Pf(sk1) + \neg Psk1 + \neg Pf(f(sk2))$
	$Pf(sk2) + \neg Psk2 + \neg Pf(f(sk1))$

(The Negated Conclusion CNF is TPTP problem SYN084-2.p)

Problem 62 is one of four variations on the same problem, the others being Problems 17, 33, 38 in (Pelletier, 1986). A full discussion of the relationships among these four problems is in (Pelletier and Sutcliffe, 1995). Their CNF versions and an explanation of the relevance of Problem 62 are also given.

References

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