

# Would you dope? A general population test of the Goldman dilemma

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Accepted 23 January 2009  
Published Online First  
10 February 2009

## ABSTRACT

**Objective:** To test Goldman's dilemma on a general population sample by asking whether they would take the Faustian bargain of a drug that guaranteed sporting success but would result in their death in 5 years' time. Between 1982 and 1995 a bi-annual survey using this dilemma suggested half of all elite athletes would take the drug.

**Design:** A random telephone survey of 250 members of the Australian general public, with counterbalanced presentation of success and death.

**Main outcome measures:** Respondents gave age, gender, sports engagement and response to the dilemma (yes/no).

**Results:** Only two of a sample of 250 reported they would take the bargain offered by the dilemma.

**Conclusions:** Athletes differ markedly from the general population in response to the dilemma. This raises significant practical and ethical dilemmas for athlete support personnel. The psychometry of the dilemma needs to be established more comprehensively for general and athlete populations.

One of the more sensational and oft-cited studies in the sports medicine literature and popular media on doping in sport is the Faustian bargain offered by Goldman's dilemma.<sup>1</sup> In Goldman's dilemma, elite athletes are asked if they would take a drug that guaranteed sporting success but would result in their death in 5 years time. The first iteration of Goldman's dilemma was posed to 198 world class athletes in 1982 in which 52% (103/198) answered in the affirmative. Goldman continued to pose evolving and improved variants of the initial dilemma and expanded the subject pool with bi-annual surveys from 1982 to 1995. Goldman notes the results have been the same each time the study has been run; approximately half of the athletes accept the deal to take the drug and win, but die within 5 years.<sup>2</sup>

The consistency across multiple replications gives the study a reliability that means the result of Goldman's dilemma has become received wisdom in sports medicine and popular literature. Publications like *Time* magazine, *The Economist* and *Sports Illustrated*<sup>3-5</sup> report Goldman's work without question as a given fact of athlete behaviour and intention. Despite confidence from the stability of replication, the studies lack a meaningful control group against which to compare the results. This short report tests Goldman's dilemma on a sample of the general population. It is hypothesised that a sample of the general population will report a significantly lower proportion of affirmative responses than the athlete population.

## METHOD

A random telephone poll of 250 Australians, 18 years and older, who live in Sydney was conducted (UNSW ethics approval A-08-22). Participants were asked their gender, age at last birthday and engagement with sports (hours participating and spectating). Respondents were presented with one of two differently worded Goldman dilemmas, counterbalanced for presentation of success and death outcome:

"Would you take an illegal performance enhancing drug that was undetectable

Condition 1: "and guaranteed you would win an Olympic gold medal, if it would kill you in five years?" (n = 125, 64.8% male, mean age 33.9 years, SD 10.4)

Condition 2: "but going to kill you in five years, if it guaranteed you won an Olympic gold medal?" (n = 125, 59.2% male, mean age 33.4 years, SD 11.3)

## RESULTS

In both condition 1 and condition 2 only one out of the 125 respondents gave a positive response (0.8%). The size of the discrepancy between 50% and 0.8% negated the need for statistical testing. Analysis by demographic or sports engagement would be meaningless given the low rate of positives.

## DISCUSSION

The results provide compelling evidence that athlete responses to the Goldman dilemma vary markedly from the general population. The results raise serious concerns about the reliability of official prevalence rates. The consequences of these concerns become even more profound when considered in the context of the 2009 revision of the World Anti-Doping Code (WADC), in which the culpability of support personnel (such as sports medical practitioners) is placed as equal to and sometimes above that of the athlete.

Testing the Goldman dilemma on a control group raises a problem for prevalence rates. The rate of temptation among athletes suggests that if any non-trivial proportion (say, 10%) succumbs the incidence of performance-enhancing drug (PED) use in sport may be well above that reported by anti-doping agencies around the world (typically <2%).<sup>6</sup> However, in the absence of a reliable epidemiology of sport estimates of PED usage remain educated guesses and logical inferences from work such as that reported here.<sup>7</sup>

The epidemiological ignorance raises serious concern. First, the testing regimes of the World

## Short report

Anti-Doping Agency and the National Anti-Doping Organisations must be questioned as the anecdotal evidence, including the Goldman dilemma, indicates a much higher use rate. Therefore, the tests are either flawed in administration (athletes can avoid tests or manage their drug use) or accuracy (laboratories cannot detect substances or the limits are too high).<sup>8</sup> The strongest evidence of the problems with testing comes from high-profile doping cases in Europe (Madrid Cycling) and the USA (BALCO). Marion Jones was the highest profile athlete caught as a result of the BALCO investigation and has been struck from the Olympic record books. Importantly, it was investigation rather than testing that caught Jones—who had returned negative results for banned substances at the Sydney Olympics. This raises a profound challenge to anti-doping education and enforcement as the official prevalence rates appear to reflect the unlucky or pharmacologically unsophisticated and fail to reflect actual use.

A complementary explanation is that the elite athlete subpopulation is a discrete group with a set of norms, values and beliefs that are quite different to those of the wider population. This is a compelling argument given anecdotal evidence of the obsessive and perverse nature of elite athletes.<sup>9</sup> This body of evidence indicates that athletes, to reach the elite level, must display a singular focus and desire often to the exclusion of other life-affirming activity. Furthermore, the intense desire to win, fuelled by this commitment may make it more likely that they would accept such a bargain. We do know that some athletes will accept such a deal without the guarantee of success, as shown by those who are caught. It is important for sports medicine practitioners and sports psychologists to recognise that athletes demonstrate this alarming flaw in health decision-making when winning is given precedence over survival. Part of the explanation for this alarming flaw in health decision-making comes from a growing literature that recognises the peculiar social circumstance of the athlete.<sup>10–13</sup> The athlete's social world is not one that necessarily reflects or supports public discourses that drug use to improve sporting performance is against the spirit of sport.

This line of reasoning implies that support personnel, including sports medicine practitioners, are complicit in the ongoing use of PED in sport. Under the 2009 WADC, support personnel can be sanctioned in the same way as athletes, with a range of bans from 4 years to life. This very significant increase in penalties moves beyond obvious anti-doping rule violations such as trafficking a banned substance, to include the more nebulous “assisting, encouraging, aiding, abetting, covering up or any other type of complicity involving an anti-doping rule violation or any attempted anti-doping rule violation” (emphasis in original).<sup>14</sup> While the premise of the Goldman dilemma is that the athlete will not be caught, the willingness of athletes to expose their support personnel to very serious sanctions should concern all sports medicine practitioners. The ethical and practical implication of the 2009 WADC for best practice medical treatment (eg, harm minimisation) requires urgent attention from academics, practitioners and administrators.<sup>15</sup>

While this research provides the much needed control group, additional research into the psychometry of the Goldman dilemma is required. Four directions for additional research have been identified. First, the results need to be confirmed for both

the general and athlete populations. The failure of the dilemma to garner positive responses in the general population could be a function of question type; the general population may see sports success as unattainable or irrelevant. For example, a 50-year-old woman may see Olympic success as irrelevant. Therefore, the Goldman dilemma needs to be expanded to include different kinds of success, such as celebrity, to determine whether different results emerge in relation to specific forms of success seen as more accessible or attainable; a 50-year-old woman can still attain success (be “discovered”) as an actress or vocalist. If such a test reveals that 50% of people in their occupation would trade success for survival in their chosen field, then the athlete population should be considered normal rather than deviant. Second, athlete Goldman dilemma responses may represent a positive response bias as a function of wording, necessitating replication using the counterbalanced presentation used here. Third, the social norms around athlete drug use may have evolved considerably since 1995 with the advent of the World Anti-Doping Agency and its attendant WADC; athlete responses to the Goldman dilemma may be very different in the contemporary sporting milieu. Fourth, complementary to the need for an epidemiology of doping, some assessment of whether responses to the Goldman dilemma reflect behaviour is needed. This may become possible if a self-report methodology being developed can be validated.<sup>16</sup>

**Funding:** The survey was funded by a University of New South Wales new staff start-up grant. The University of New South Wales had no role in the design, analysis or reporting of this study.

**Competing interests:** None.

**Ethics approval:** University of New South Wales ethics approval A-08-22.

**Provenance and peer review:** Not commissioned; not externally peer reviewed.

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*Br J Sports Med* 2009 43: 871-872 originally published online February 11, 2009

doi: 10.1136/bjasm.2009.057596

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