

THE UNHAPPINESS OF PROBLEM GAMBLERS

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THE RISE OF HAPPINESS STUDIES

“The New Science”

It started in the 1970s with the US General Social Survey which asked the question

Taken all together how would you say things are these days? Would you say you are very happy, pretty happy or not too happy?

very happy=3, pretty happy=2, not too happy=1

- The scale has tended to change over time, so that there is now usually a ten point rather than a three point scale
- But the essence of the question has remained the same
- It asks how people rate their life “these days”- ie it attempts not to measure mood today but some long-run concept of wellbeing
- Sets of answers now exist for many countries, rich and poor, for long periods of time, with hundreds of thousands of respondents
- In Europe, Eurobarometer asks a Europe-wide sample about their happiness every six months
- There have been several happiness surveys in China
- Here in Macau there have been two happiness surveys- one carried out at MPI was analysed recently in an article in Journal of Gambling Studies

ARE PEOPLE'S ANSWERS CREDIBLE?

- it seems so- statistical models reveal intuitively plausible patterns in answers that are stable over time and space
- for example, marriage always raises predicted happiness score by about 0.6-0.8 points on a ten point scale, very good rather than very bad health always raises predicted happiness score by about two full points
- this suggests that people's answers are considered and sensible and we can with confidence ask questions like "what difference does gambling behaviour make?"
- moreover, psychologists' validation studies find high correlation between individuals' happiness scores and other indicators of mental wellbeing (eg how often the subject smiles) and other people's assessment of the subject's state of mind
- the medical literature provides evidence from longitudinal data that happiness score predicts *future* heart disease, stroke, suicide and longevity- more evidence that asking the happiness question generates potentially useful data
- a caveat is that large samples are needed since unobserved personality characteristics are liable to have an important influence on responses to the happiness question and only in a large sample will the effects of unobserved factors cancel out across respondents and allow statistically significant patterns to emerge

- by 2005, analysis of happiness data and the determinants of happiness was sufficiently advanced that Prof. Lord Layard published a book arguing that **all** government policy decisions should be evaluated in terms of expected impact on happiness
- Bhutan formally adopted maximisation of happiness (GNH) rather than GDP as its over-riding policy goal
- In 2010, the new UK Government mandated its Statistical Service to conduct large scale surveys to track individuals' happiness & wellbeing and said that trends would be used to measure the success of public policy
- In July, 2011, a resolution of the UN General Assembly invited member states to gather data that would capture the importance of the pursuit of happiness “with a view to guiding their public policies”

EXAMPLE OF USE OF HAPPINESS DATA IN POLICY DEBATE

- the 2012 World Happiness Survey, for the UN, surveyed what we know of the determinants of happiness
- it noted familiar findings from the academic literature that good health and a good family life were the most important factors explaining the pattern of happiness across individuals- income mattered but less so
- across countries, the degree of political freedom was an important influence on mean happiness scores
- importantly for us, it noted also that **“mental health is the biggest single factor affecting happiness in any country”**

LSE STUDY (2012)

- in July, 2012, the Centre for Economic Policy Research at the London School of Economics published a report arguing that there was serious under-provision of mental health treatment in the UK
- according to analysis of data from the UK health survey, individuals suffering from depression or anxiety disorders experienced low levels of wellbeing comparable with those associated with very serious physical ailments
- but, even though mental disorders were much cheaper to treat, and had high incidence in the population, massively smaller resources were allocated to diagnosis & treatment than in the rest of the Health Service
- this Report has triggered major debate on the allocation of funds within the Health Service in the United Kingdom
- similarly to the LSE study, my analysis focuses on wellbeing and a psychiatric disorder, “problem gambling”

GAMBLING

- well before the LSE Study, I had persuaded the UK Gambling Commission to include a happiness question in its next Prevalence Survey

- the question to be put was:

“Taking all things together, on a scale of 1 to 10, how happy would you say you are these days?”

- the question was duly included in the 2010 British Gambling Prevalence Survey (BGPS)- the Report on the BGPS appeared in 2011 and data are now available from the UK Data Archive

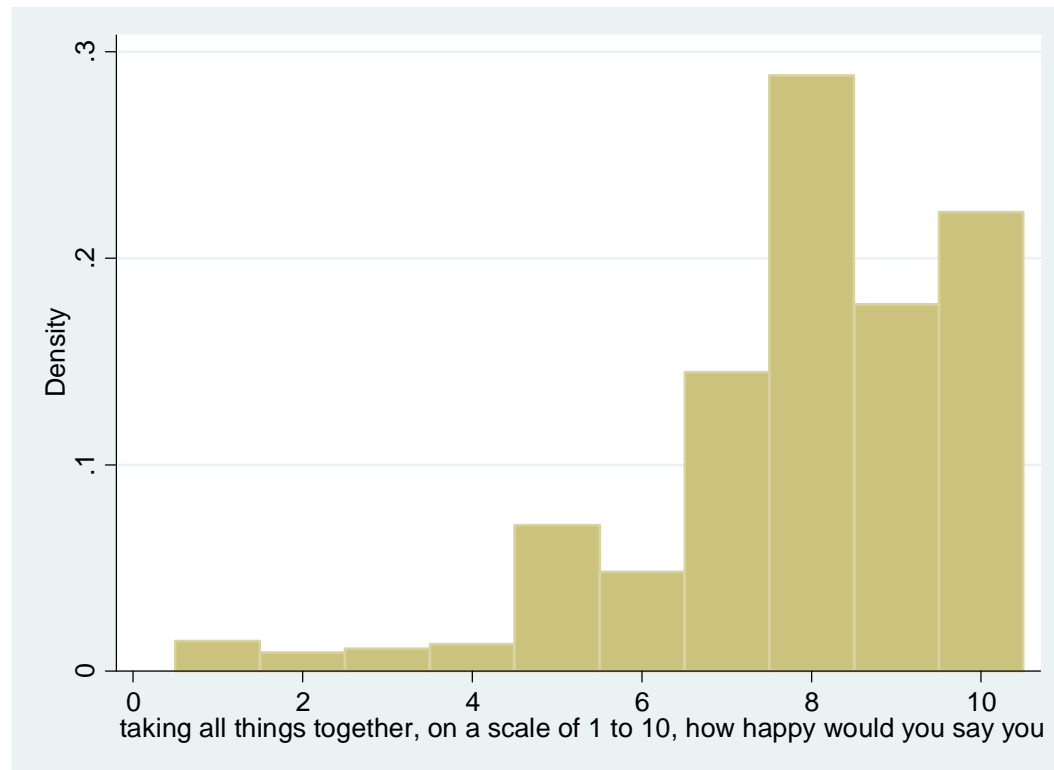
THE BGPS (2010)

- field work was carried out by NatCen
- it used a random sample of residential addresses in England, Scotland & Wales
- 7,756 adults (16 or over) were interviewed (of whom 7,721 answered the happiness question)
- very detailed information was obtained about individuals' gambling behaviour
- two problem gambling screens, DSM-IV and the PGSI were applied
- information was also gathered about respondents' age, ethnicity, education, labour force status, income, health, and lifestyle

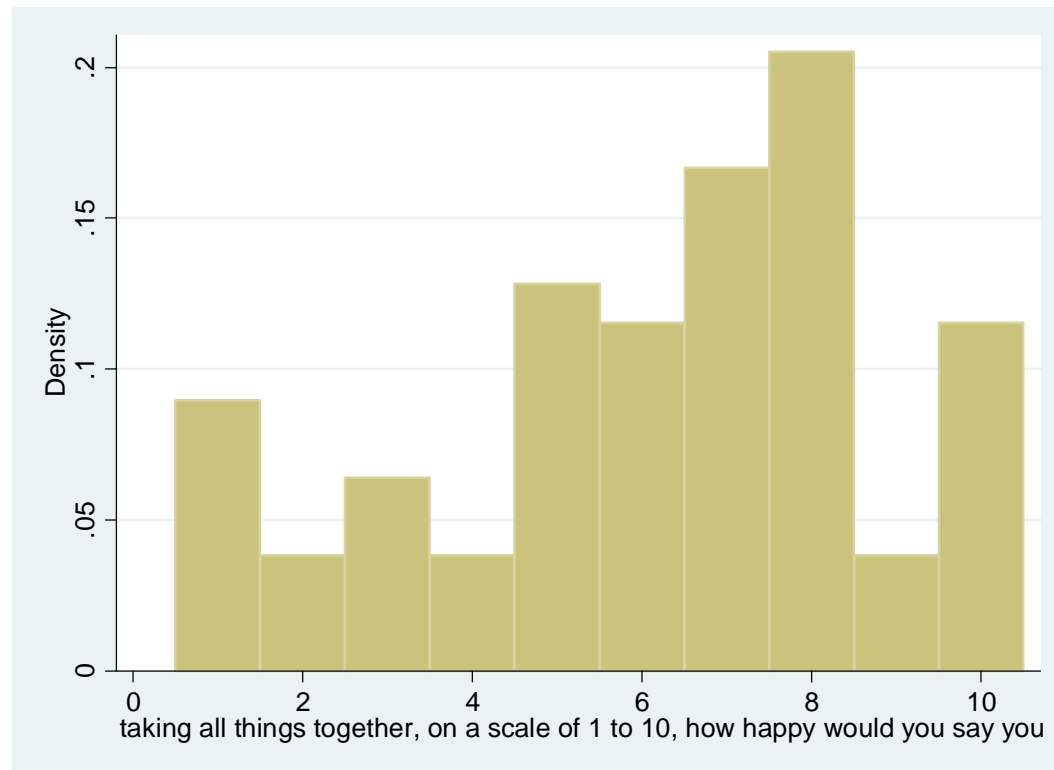
HEADLINES FROM BGPS (2010)

- 73% had gambled in the past year and 43% in the past week
- the National Lottery draw was by far the most popular activity but, nevertheless, 56% had engaged in some other form of gambling in the past year
- online gambling (other than buying NL draw tickets) had past-year participation of 7%
- **according to the DSM-IV screen, the problem gambling prevalence rate was 0.9% (implying 451,000 problem gamblers)**
- **according to the PGSI screen, the problem gambling prevalence rate was 0.7% (implying 360,000 problem gamblers)**
- compared to 2007, DSM-IV PG had increased (though the increase was of marginal statistical significance) whereas the figure for PGSI PG was stable

ANSWERS TO THE HAPPINESS QUESTION (WHOLE SAMPLE EXCEPT PROBLEM GAMBLERS)



ANSWERS TO THE HAPPINESS QUESTION (PROBLEM GAMBLERS)



- so the raw data show that problem gamblers as a group report much lower wellbeing than the rest of the sample
- mean score is **6.15** for PG, **7.90** for the rest
- PG appears to be associated with a happiness score that is depressed by approximately one standard deviation
- if we define wellbeing poverty as being in the bottom 15% of happiness scores, more than 47% of problem gamblers fall in that range
- problem gamblers appear to be **three times** as likely to be “very unhappy” as the general population

BUT....

- summary statistics from raw data are not enough
- problem gamblers may have a different profile from others
- for example, if they are disproportionately male and low-income and drawn from ethnic minorities, these characteristics may account for at least some of their tendency to be unhappy
- therefore we need a statistical model to predict happiness score and that allows us therefore to control for as many other relevant variables as possible

modelling

- the established strategy in the literature is to estimate a baseline regression model to account for happiness score
- it is well established that such a model will as a minimum include variables measuring demography, family circumstances, health, labour force status and income
- after estimation of a baseline model, add to it a focus variable representing the characteristic in which the researcher is interested (here problem gambler)
- the result then shows how much difference the focus variable makes to expected happiness score **given** demographic status, family circumstances, health, income, labour force status, and so on

principal explanatory variables in the baseline model

ethnicity

age

education level

marital status

presence of children

household income

labour force status

alcohol use

smoking status

selected results

health

	males	females
very good health	+0.91***	+0.87***
good health	+0.37***	+0.44***
bad health	-0.64***	-0.87***
very bad health	-1.39***	-1.43***

these numbers show impact on expected happiness score compared with a reference (excluded) category, in this case “average health”

health is by far the biggest influence on happiness score in the model: the difference between very good and very bad health is more than two happiness points on the ten point scale

marriage and children

	males	females
living with spouse/partner	+0.59***	+0.61***
widowed	-0.60***	-0.23
separated/ divorced	+0.03	-0.10
children	-0.03	-0.20**

the finding that marriage is “worth” about 0.6 points (relative to reference/ excluded category) is remarkably constant over data sets from different countries and different periods

it is quite common also to find that children tend to lower wellbeing for females- may reflect the greater burden borne by women in respect of caring for children

other results are also familiar

- most non-white groups exhibit depressed happiness scores, especially “mixed race” where the coefficient estimates are -0.75 for men and -0.81 for women
- middle-age is the time of lowest happiness, especially for men
- unemployment is a very negative factor, for men particularly-reduces expected happiness score by 0.73 points
- income matters but to a modest extent
- education has little direct effect on expected happiness score (though it may have some indirect effect through the income variables)

ADDING GAMBLING VARIABLES

- in all the results reported subsequently, all the variables included in the baseline model are retained
- the results on all of them proved highly robust in the presence of extra “gambling variables”
- the first, simple exercise repeats the baseline model but with an indicator variable for “problem gambler”
- “problem gambler” is set equal to one where the subject was classified as a problem gambler according to either or both PG screens (DSM-IV and PGSI)
- the result will show the difference in expected happiness score where all the other variables (age, ethnicity, income, etc, etc) are held constant

	males	females
problem gambler	-1.31***	-1.11***

these are very large effects- for men the fall in happiness score associated with PG is similar to that associated with going from “average” to “very bad” health

it is twice the size of the penalty associated with unemployment or with not having a partner

a technical note

- the analysis here (ordinary least squares regression) treats the dependent variable as *cardinal*
- but it is more properly regarded as *ordinal* because a score of 8 does not mean that I am “twice” as happy as if I had replied 4 instead
- the literature shows that treating the data as ordinal does not in fact lead to substantively different conclusions in cases where results from the two approaches have been compared
- nevertheless, I checked all the results presented today against an alternative model specification, a “probit” regression with the probability of being in wellbeing poverty (happy=6 or below) to be explained
- in probit regression, the impact of an explanatory variable varies according to the values of all the other variables
- for a reference individual, (white, young, middle education, single,...), **problem gambler** raised the probability of wellbeing poverty from **0.15** to **0.38** in the case of men and from **0.14** to **0.30** in the case of women

- these results already have a big implication
- problem gamblers as a group exhibit depressed levels of wellbeing, comparable with those associated with seriously bad physical health
- in many jurisdictions, problem gambling is regarded as a fringe issue and not taken as seriously in health services as physical illness
- **in fact, if we take wellbeing as an over-riding criterion, these figures suggest that it would be justified to allocate significant resources to identifying and treating problem gamblers, always providing of course that treatment can be shown to be effective**

- the conclusion from the first model is exactly similar to that drawn by the authors of the LSE study earlier this year
- but the LSE Report claimed that the link between wellbeing and mental illness was a *causative* one
- the authors anticipated criticism that it might be just association rather than causation- after all low happiness might cause mental illness rather than vice versa
- they therefore employed longitudinal data and regressed wellbeing on indicator variables representing the subject's mental health status six years earlier

- certainly this eliminates reverse causation- low happiness today cannot “cause” anxiety disorder six years ago
- but it does not purge the model of endogeneity
- for example, genetic make-up/ personality characteristics are not observed in the data but the same unobserved characteristics may *both increase lifetime risk of mental illness and reduce an individual’s capacity for happiness*
- in this case, low happiness and mental illness will be correlated; but this is not evidence that low wellbeing is caused by mental illness
- *in my view, the claims from LSE are too strong*

- here, of course, we have the same issue
- the equation presented cannot tell us that the unhappiness evident among problem gamblers is *caused* by their problem gambling
- but it is still valuable to have evidence, from a population survey, that problem gamblers as a group are very unhappy indeed, by the yardsticks of the low levels of wellbeing reported by the very physically ill or the unemployed
- it implies that those presenting as problem gamblers are worth worrying about a lot -and worth treating even if at high cost- but the assessment and therapy should be informed by the possibility that the underlying cause of low wellbeing might be something other than PG

social cost of PG

- ten years ago, the Whistler Conference failed to find a consensus on how to assess the harm associated with PG
- it focused on trying to put **money** values on the harms associated with problem gambling- high suicide rates, domestic disharmony, and so on
- measurement of **wellbeing** implications offers an alternative and more direct way of understanding how badly off problem gamblers are
- both approaches have the limitation that the harms associated with PG may have “causes” other than PG itself
- but the exercise is still worthwhile if the evidence is employed just to guide us on how much it is worth spending to address *the problems of problem gamblers* (where these may, and indeed are likely to, go beyond those stemming from their gambling behaviour)

now for some more modelling

- the simple exercise reported so far has strong policy implications
- these will not change in subsequent analysis
- but more insights may be gained
- so far, we have compared problem gamblers with the whole of the rest of the sample
- but we have potentially relevant information about participation in gambling by the rest of the sample
- therefore let us now distinguish between “non gamblers”, “gamblers without a problem” and “problem gamblers”
- problem gambler is again defined on the basis of the respondent being so classified according to at least one of the two PG screens

	males	females
gambler, no problem	+0.12	-0.01
problem gambler	-1.23***	-1.11***

(reference group is: non-gamblers)

the results on PG are as before

for women, there was no difference in expected happiness score between “recreational gamblers” and non-gamblers

for men, there was no statistically significant difference; but the result that “recreational gamblers” were happier than non-gamblers was close to statistical significance-worth of further investigation

	males	females
white gambler, no problem	+0.16**	+0.04
non-white gambler, no problem	-0.42***	-0.69***
problem gambler	-1.25***	-1.20***

In the majority white community, where gambling carries little stigma, recreational gamblers are actually “happier” than non-gamblers in the case of men

In the minority non-white community, where gambling is less prevalent and often stigmatised, recreational gambling is associated with depressed wellbeing

comparisons for whites are relative to white non-gamblers and for non-whites are relative to non-white non-gamblers

	males	females	females
white gambler, no problem	+0.16**	+0.04	+0.02
white gambler, no problem, bingo			+0.17*
non-white gambler, no problem	-0.42***	-0.69***	-0.69***
problem gambler	-1.25***	-1.20***	-1.20***

this slide shows the same results as before but with an extra column- this reports an experiment to investigate whether female bingo hall players are different from other female gamblers- in the sample, 418 white women played bingo, a participation-rate of 11%.

there was some indication that (off-line) bingo was associated with modestly elevated levels of “happiness” among females

thus in the majority (91.4%) population, where various forms of gambling are mainstream activities, there are indications that “recreational gambling”, for both men and women, is associated with elevated wellbeing

this does not imply that gambling *causes* wellbeing; but a precautionary approach based on the analysis would be to be wary of seeking to control problem gambling by strong legal restrictions on the availability of gambling

WHAT ABOUT “AT RISK” PROBLEM GAMBLERS?

- the analysis so far has treated all gamblers as either problem gamblers or non-problem (recreational) gamblers
- but the distinction is based on artificial (?) thresholds in the screens, eg in DSM-IV, a problem gambler is defined as anyone with three positives in the ten question screen
- those with DSM score=2 are conventionally termed “at risk”: should we be worried about this group?
- the PGSI identifies “low risk” and “moderate” risk as well as full-blown problem gamblers
- **should we be worried about those who “nearly” qualify as problem gamblers?**
- we now repeat the statistical model, distinguishing this time between non-gamblers, pgsi safe gamblers, pgsi low risk gamblers, pgsi moderate risk gamblers, pgsi problem gamblers
- we drop here distinctions between white and non-white respondents since some cells become too thinly populated to permit robust conclusions to be drawn- for example, there are only 30 female pgsi moderate risk gamblers and, if we separate out nonwhites, there are only 6

THE PGSI

- devised specifically for use in the general population rather than in clinical settings
- nine items, such as chasing losses, gambling causing health problems, feeling guilty about gambling
- never=0, sometimes=1, most of the time=2, almost always=3
- total score 0=safe
- total score 1-2=low risk
- total score 3-7= moderate risk
- total score 8 or more= problem gambler

IN OUR SAMPLE

- 2,031 non gamblers
- 5,121 safe gamblers
- 401 low risk gamblers
- 119 moderate risk gamblers
- 49 problem gamblers

	males	females
safe gambler	+0.16**	+0.03
low risk gambler	-0.12	-0.54***
moderate risk gambler	-0.67***	-0.90***
problem gambler	-1.17***	-0.95*

before, we defined problem gambling status by a measure that mixed up dsm and pgsi results (PG according to either qualified as a problem gambler)

now we apply a consistent measure, the PGSI

the result that, for males, safe gambling is consistent with elevated wellbeing comes through more cleanly

for females, even a low risk pgsi score predicts “unhappiness”

for males, depressed wellbeing is observed first at moderate risk status

- for either gender, symptoms of dysfunctional gambling predict depressed wellbeing at levels below the threshold for classification as problem gamblers
- many more people exhibit sub-threshold pgsi scores than reach the threshold
- if we were to count people whose gambling behaviour predicts unhappiness, the estimated number of problem gamblers in the population would increase greatly
- on the basis of the PGSI threshold, BGPS (2010) estimated that there were 360,000 “problem gamblers” in Britain
- if “moderate risk” status qualified as problem gamblers, the prevalence rate would increase from 0.7% to 2.5% and the estimate of numbers would swell to well over one million
- the analysis here provides support for a less conservative threshold since moderate risk gamblers as a group not only exhibit problematic gambling behaviour but they also have low wellbeing relative to persons in otherwise similar life circumstances

the DSM

- findings were broadly similar for DSM in the case of females
- for the DSM, the threshold is 3: a score of 2 qualifies as “at risk”
- for females, *even a score of 1* predicted depressed wellbeing ($p < .01$)
- but for males, gamblers exhibited modestly elevated wellbeing compared with non-gamblers up to and including a score of 2
- for males, the “official” threshold of 3 coincided with the point at which the model predicted depressed wellbeing
- the BGPS (2010) estimate of the number of problem gamblers in Britain was 451,000: this would increase to about 600,000 if female at risk gamblers were included

GENDER

- official data suggest that the prevalence of problem gambling is very much lower for women than for men
- the gap may be overestimated when based on asking men and women the same questions and applying the same thresholds
- from both the PGSI and the DSM results, quite low levels of problematic gambling behaviour are symptomatic of depressed wellbeing among women
- this raises the question of whether it is appropriate to apply the same screens to both genders
- this idea is reinforced by our next modelling exercise
- this was to take the basic wellbeing model and add to it information on answers to **individual** screen items

DSM ITEMS

1. chase losses
2. preoccupation with gambling
3. need to gamble with increasing amounts of money
4. restless or irritable when try to stop
5. gamble to escape
6. failed to cut back
7. lie about gambling
8. committed crime to fund gambling
9. risked relationships
10. rely on others for help in a financial crisis from gambling

ITEM 5 (ESCAPE)

- a positive response on this item was a strongly significant predictor of depressed wellbeing for both men and women
- there is an element of tautology here- if you gamble to escape problems, you must be unhappy to begin with because you have problems
- for men, item 8 (criminal acts) was also strongly significant but no other item was even close to being an individually statistically significant predictor of wellbeing

BUT FOR WOMEN...

- Items 1 and 2 were each individually significant ($p < .001$) with large coefficient estimates, around -0.8
- so **chasing losses** and **preoccupation with gambling** give no clue to wellbeing in the case of men but are very strong clues to depressed wellbeing amongst women
- for both men and women, these are the two items with the highest frequency of positive responses
- that these behaviours appear to have a significance for women but not for men accounts for why lower wellbeing attaches to at risk status (dsm=2) only in the case of women
- there is a case for interpreting results from the dsm screen differently for men and women
- In devising “short screens”, the appropriate questions to capture unhappy problem gamblers may be different for men and women

FINALLY....

- the evidence is strong that those who exhibit signs of dysfunctional gambling behaviour comprise a group in society worthy of attention even if the particular data set cannot yield evidence on the source of their unhappiness
- but others may be unhappy as well
- stress on spouses and other relatives is another factor to consider in assessing the priority that society should give to tackling problem gambling
- BGPS (2010) asked respondents whether they had a close relative (including a spouse) who had had a gambling problem in the last twelve months
- 115 men and 178 women reported having a relative with a gambling problem
- this variable was added to the statistical model (including own gambling/ problem gambling variables)

	males	females
relative with a gambling problem	-0.99***	-0.39***

(results on own gambling similar as before)

here is evidence that the costs of problem gambling may ripple out to affect others

as elsewhere, endogeneity is a potential problem- for example the unobserved personality trait “pessimism” might cause a respondent to both give a negative evaluation of his or her own life and a take a gloomy view of others’ gambling behaviour

nevertheless, the coefficients are large and precisely estimated, so the argument that the social costs of problem gamblers are magnified once others’ wellbeing is taken into account must be taken seriously

**problem gamblers and their families are very unhappy-
the researchers present who strive to understand how we can
mitigate that unhappiness are not misdirecting their skills**