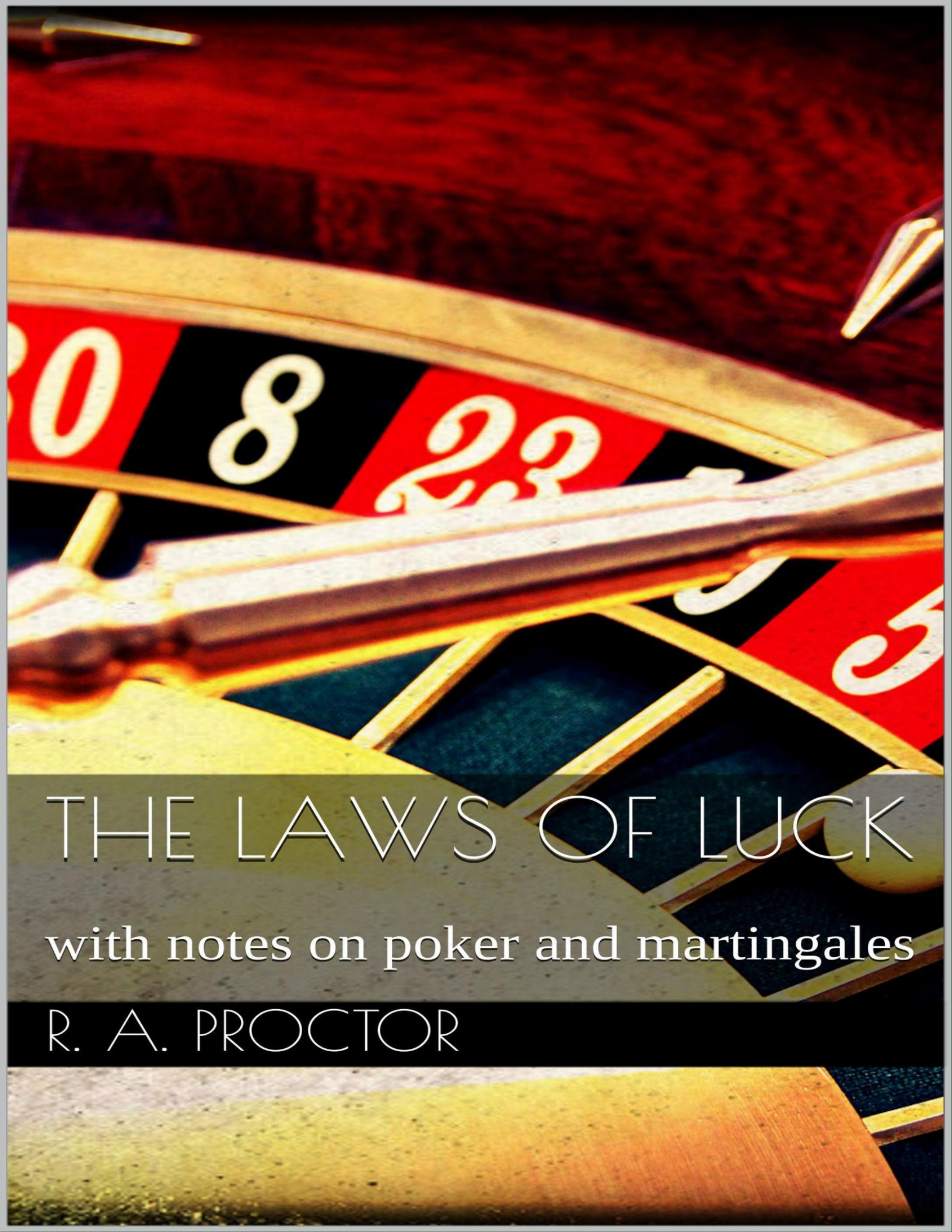
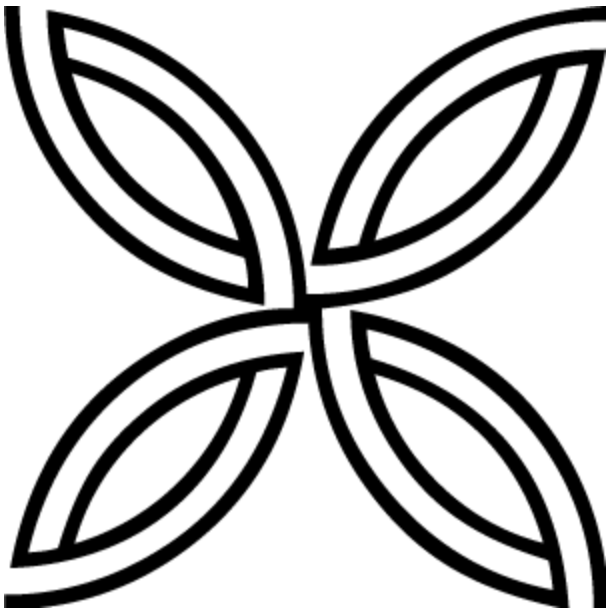

THE LAWS OF LUCK
with notes on poker and martingales
R. A. PROCTOR

The laws of luck

The laws of luck

Richard A. Proctor



Laws of Luck

To the student of science, accustomed to recognise the operation of law in all phe-
nomena, even though the nature of the law and the manner of its operation may be
unknown, there is something strange in the prevalent belief in luck. In the operations
of nature and in the actions of men, in commercial transactions and in chance games,
the great majority of men recognise the prevalence of something outside law—the
good fortune or the bad fortune of men or of nations, the luckiness or unluckiness
of special times and seasons—in fine (though they would hardly admit as much in
words), the influence of something extranatural if not supernatural. [For to the man
of science, in his work as student of nature, the word ‘natural’ implies the action of
law, and the occurrence of aught depending on what men mean by luck would be
simply the occurrence of something supernatural.]This is true alike of great things
and of small; of matters having a certain dignity, real or apparent, and of matters
which seem utterly contemptible.Napoleon announcing that a certain star (as he
supposed) seen in full daylight washisstar and indicated at the moment the ascen-
dency of his fortune, or William the Conqueror proclaiming, as he rose with hands
full of earth from his accidental fall on the Sussex shore, that he was destined by

fate to seize England, may not seem comparable with a gambler who says that he shall win because he is in the vein, or with a player at whist who rejoices that the cards he and his partner use are of a particular colour, or expects a change from bad to good luck because he has turned his chair round thrice; but one and all are alike absurd in the eyes of the student of science, who sees law, and not luck, in all things that happen. He knows that Napoleon's imagined star was the planet Venus, bound to be where Napoleon and his officers saw it by laws which it had followed for past millions of years, and will doubtless follow for millions of years to come.He knows that William fell (if by accident at all) because of certain natural conditions affecting him physiologically (probably he was excited and over anxious) and physically, not by any influence affecting him extranaturally.But he sees equally well that the gambler's superstitions about 'the vein,' the 'maturity of the chances,' about luck and about change of luck, relate to matters which are not only subject to law, but may be dealt with by processes of calculation. He recognises even in men's belief in luck the action of law, and in the use which clever men like Napoleon and William have made of this false faith of men in luck, a natural result of cerebral development, of inherited qualities, and of the system of training which such credulous folk have passed through.

Let us consider, however, the general idea which most men

have respecting what
they call luck.We shall find that what they regard as affording clear evidence that
there is such a thing as luck is in reality the result of law.Nay, they adopt such a
combination of ideas about events which seem fortuitous that the kind of evidence
they obtain must have been obtained, let events fall as they may.
Let us consider the ideas of men about luck in gambling, as typifying in small the
ideas of nearly all men about luck in life.
In the first place, gamblers recognise some men as always lucky. I do not mean, of
course, that they suppose some men always win, but that some men never have spells
of bad luck.They arealways‘in the vein,’ to use the phraseology of gamblers like
Steinmetz and others, who imagine that they have reduced their wild and wandering
notions about luck into a science.
Next, gamblers recognise those who start on a gambling career with singular good
luck, retaining that luck long enough to learn to trust in it confidently, and then
losing it once for all, remaining thereafter constantly unlucky.
Thirdly, gamblers regard the great bulk of their community as men of varying
luck—sometimes in the ‘vein’ sometimes not—men who, if they are to be successful,
must, according to the superstitions of the gambling world, be most careful to watch
the progress of events. These, according to Steinmetz, the great authority on all such
questions (probably because of the earnestness of his belief

in gambling superstitions),
may gamble or not, according as they are ready or not to obey the dictates of gambling
prudence. When they are in the vein they should gamble steadily on; but so soon as
‘the maturity of the chances’ brings with it a change of luck they must withdraw. If
they will not do this they are likely to join the crew of the unlucky.
Fourthly, there are those, according to the ideas of gamblers, who are pursued by
constant ill-luck. They are never ‘in the vein.’ If they win during the first half of an
evening, they lose more during the latter half. But usually they lose all the time.
Fifthly, gamblers recognise a class who, having begun unfortunately, have had a
change of luck later, and have become members of the lucky fraternity. This change
they usually ascribe to some action or event which, to the less brilliant imaginations
of outsiders, would seem to have nothing whatever to do with the gambler’s luck.
For instance, the luck changed when the man married—his wife being a shrew; or
because he took to wearing white waistcoats; or because so-and-so, who had been a
sort of evil genius to the unlucky man, had gone abroad or died; or for some equally
preposterous reason.
Then there are special classes of lucky or unlucky men, or special peculiarities of
luck, believed in by individual gamblers, but not generally recognised.

Thus there are some who believe that they are lucky on

certain days of the week,
and unlucky on certain other days.The skilful whist-player who, under the name
‘Pembridge,’ deplores the rise of the system of signals in whist play, believes that he
is lucky for a spell of five years, unlucky for the next five years, and so on continually.
Bulwer Lytton believed that he always lost at whist when a certain man was at the
same table, or in the same room, or even in the same house.And there are other
cases equally absurd.
Now, at the outset, it is to be remarked that, if any large number of persons set to
work at any form of gambling—card play, racing, or whatever else it may be—their
fortunesmustbe such, let the individual members of the company be whom they
may, that they will be divisible into such sets as are indicated above. If the numbers
are only large enough, not one of those classes, not even the special classes mentioned
at the last, can fail to be represented.
Consider, for instance, the following simple illustrative case:—
Suppose a large number of persons—say, for instance, twenty millions—engage in
some game depending wholly on chance, two persons taking part in each game, so that
there are ten million contests.Now, it is obvious that, whether the chances in each
contest are exactly equal or not, exactly ten millions of the twenty millions of persons
will rise up winners and as many will rise up losers, the game being understood to
be of such a kind that one player or the other must win. So

far, then, as the results
of that first set of contests are concerned, there will be ten million persons who will
consider themselves to be in luck.
Now, let the same twenty millions of persons engage a second time in the same
two-handed game, the pairs of players being not the same as at the first encounter,
but distributed as chance may direct. Then there will be ten millions of winners and
ten millions of losers.Again, if we consider the fortunes of the ten million winners
on the first night, we see that, since the chance which, each one of these has of being
again a winner is equal to the chance he has of losing,aboutone-half of the winning
ten millions of the first night will be winners on the second night too.Nor shall we
deduce a wrong general result if, for convenience, we sayexactlyone-half; so long as
we are dealing with very large numbers we know that this result must be near the
truth, and in chance problems of this sort we require (and can expect) no more. On
this assumption, there are at the end of the second contest five millions who have
won in both encounters, and five millions who have won in the first and lost in the
second.The other ten millions, who lost in the first encounter, may similarly be
divided into five millions who lost also in the second, and as many who won in the
second.Thus, at the end of the second encounter, there are five millions of players
who deem themselves lucky, as they have won twice and not lost at all; as many who

deem themselves unlucky, having lost in both encounters; while ten millions, or half
the original number, have no reason to regard themselves as either lucky or unlucky,
having won and lost in equal degree.

Extending our investigation to a third contest,we find that 2,500,000 will be
confirmed in their opinion that they are very lucky,since they will have won in
all three encounters; while as many will have lost in all three, and begin to regard
themselves, and to be regarded by their fellow-gamblers, as hopelessly unlucky.Of
the remaining fifteen millions of players, it will be found that 7,500,000 will have won
twice and lost once, while as many will have lost twice and won once.(There will
be 2,500,000 who won the first two games and lost the third, as many who lost the
first two and won the third, as many who won the first, lost the second, and won the
third, and so on through the six possible results for these fifteen millions who had
mixed luck.) Half of the fifteen millions will deem themselves rather lucky, while the
other half will deem themselves rather unlucky.None, of course, can have had even
luck, since an odd number of games has been played.
Our 20,000,000 players enter on a fourth series of encounters.At its close there
are found to be 1,250,000 very lucky players, who have won in all four encounters,
and as many unlucky ones who have lost in all four. Of the 2,500,000 players who had
won in three encounters, one-half lose in the fourth; they

had been deemed lucky, but
now their luck has changed.So with the 2,500,000 who had been thus far unlucky:
one-half of them win on the fourth trial.We have then 1,250,000 winners of three
games out of four, and 1,250,000 losers of three games out of four. Of the 7,500,000
who had won two and lost one, one-half, or 3,750,000, win another game, and must be
added to the 1,250,000 just mentioned, making three million winners of three games
out of four.The other half lose the fourth game, giving us 3,750,000 who have had
equal fortunes thus far, winning two games and losing two.Of the other 7,500,000,
who had lost two and won one, half win the fourth game, and so give 3,750,000 more
who have lost two games and won two: thus in all we have 7,500,000 who have had
equal fortunes. The others lose at the fourth trial, and give us 3,500,000 to be added
to the 1,250,000 already counted, who have lost thrice and won once only.
At the close, then, of the fourth encounter, we find a million and a quarter of
players who have been constantly lucky,and as many who have been constantly
unlucky.Five millions, having won three games out of four, consider themselves to
have better luck than the average; while as many, having lost three games out of four,
regard themselves as unlucky.Lastly, we have seven millions and a half who have
won and lost in equal degree.These, it will be seen, constitute the largest part of
our gambling community, though not equal to the other

classes taken together. They
are, in fact, three-eighths of the entire community.
So we might proceed to consider the twenty millions of gamblers after a fifth
encounter, a sixth, and so on. Nor is there any difficulty in dealing with the matter in
that way. But a sort of account must be kept in proceeding from the various classes
considered in dealing with the fourth encounter to those resulting from the fifth, from
these to those resulting from the sixth, and so on.And although the accounts thus
requiring to be drawn up are easily dealt with, the little sums (in division by two,
and in addition) would not present an appearance suited to these pages. I therefore
now proceed to consider only the results, or rather such of the results as bear most
upon my subject.
After the fifth encounter there would be (on the assumption of results being always
exactly balanced, which is convenient, and quite near enough to the truth for our
present purpose) 625,000 persons who would have won every game they had played,
and as many who had lost every game. These would represent the persistently lucky
and unlucky men of our gambling community. There would be 625,000 who, having
won four times in succession, now lost, and as many who, having lost four times in
succession, now won. These would be the examples of luck—good or bad—continued
to a certain stage, and then changing. The balance of our 20,000,000, amounting to
seventeen millions and a half, would have had varying

degrees of luck, from those who had won four games (not the first four) and lost one, to those who had lost four games (not the first four) and won but a single game.The bulk of the seventeen millions and a half would include those who would have had no reason to regard themselves as either specially lucky or specially unlucky. But 1,250,000 of them would be regarded as examples of a change of luck, being 625,000 who had won the first three games and lost the remaining two, and as many who had lost the first three games and won the last two.

Thus, after the fifth game, there would be only 1,250,000 of those regarded (for the nonce) as persistently lucky or unlucky (as many of one class as of the other), while there would be twice as many who would be regarded by those who knew of their fortunes, and of course by themselves, as examples of change of luck, marked good or bad luck at starting, and then bad or good luck.

So the games would proceed, half of the persistently lucky up to a given game going out of that class at the next game to become examples of a change of luck, so that the number of the persistently lucky would rapidly diminish as the play continued.

So would the number of the persistently unlucky continually diminish, half going out at each new encounter to join the ranks of those who had long been unlucky, but had at last experienced a change of fortune.

After the twentieth game, if we suppose constant exact halving to take place as

far as possible, and then to be followed by halving as near as possible, there would be
about a score who had won every game of the twenty. No amount of reasoning would
persuade these players, or those who had heard of their fortunes, that they were not
exceedingly lucky persons—not in the sense of being lucky because theyhadwon,
but of beinglikelier to winat any time than any of those who had taken part in the
twenty games. They themselves and their friends—ay, and their enemies too—would
conclude that they ‘could not lose.’ In like manner, the score or so who had not won
a single game out of the twenty would be judged to be most unlucky persons, whom
it would be madness to back in any matter of pure chance.
Yet—to pause for a moment on the case of these apparently most manifest examples
of persistent luck—the result we have obtained has been to show that inevitably
there must be in a given number of trials about a score of these cases of persistent
luck, good or bad, and about two score of cases where both good and bad are counted
together.We have shown that, without imagining any antecedent luckiness, good
or bad, there must be what, to the players themselves, and to all who heard of or
saw what had happened to them, would seem examples of the most marvellous luck.
Supposing, as we have, that the game is one of pure chance, so that skill cannot in-
fluence it and cheating is wholly prevented, all betting men would be disposed to say,
‘These twenty are persons whose good luck can be

depended on; we must certainly
back them for the next game: and those other twenty are hopelessly unlucky; we may
lay almost any odds against their winning.’
But it should hardly be necessary to say that that whichmusthappen cannot
be regarded as due to luck.There must besomeset of twenty or so out of our
twenty millions who will win every game of twenty; and the circumstance that this
has befallen such and such persons no more means that they are lucky, and is no
more a matter to be marvelled at, than the circumstance that one person has drawn
the prize ticket out of twenty at a lottery is marvellous, or signifies that he would be
always lucky in lottery drawing.
The question whether those twenty persons who had so far been persistently lucky
would be better worth backing than the rest of the twenty millions, and especially
than the other twenty who had persistently lost, would in reality be disposed of at
the twenty-first trial in a very decisive way: for of the former score about half would
lose, while of the latter score about half would win. Among a thousand persons who
had backed the former set at odds there would be a heavy average of loss; and the
like among a thousand persons who had laid against the latter set at odds.
It may be said this is assertion only, that experience shows that some men are
lucky and others unlucky at games or other matters depending purely on chance, and
it must be safer to back the former and to wager against

the latter.The answer is
that the matter has been tested over and over again by experience, with the result
that, as`a priorireasoning had shown, some men are bound to be fortunate again and
again in any great number of trials, but that these are no more likely to be fortunate
on fresh trials than others, including those who have been most unfortunate.The
success of the former shows only that theyhave been, not that theyarelucky; while
the failure of the others shows that theyhavefailed, nothing more.
An objection will—about here—have vaguely presented itself to believers in luck,
viz. that, according to the doctrine of the ‘maturity of the chances,’ which must apply
to the fortunes of individuals as well as to the turn of events, one would rather expect
the twenty who had been so persistently lucky to lose on the twenty-first trial, and
the twenty who had lost so long to win at last in that event. Of course, if gambling
superstitions might equally lead men to expect a change of luck and continuance
of luck unchanged, one or other view might fairly be expected to be confirmed by
events. And on a single trial one or other event—that is, a win or a loss—mustcome
off, greatly to the gratification of believers in luck. In one case they could say, ‘I told
you so, such luck as A’s was bound to pull him through again’; in the other, ‘I told
you so, such luck was bound to change’: or if it were the loser of twenty trials who was
in question, then, ‘I told you so, he was bound to win at

last’; or, ‘I told you so, such
an unlucky fellow was bound to lose.’ But unfortunately, though the believers in luck
thus run with the hare and hunt with the hounds, though they are prepared to find
any and every event confirming their notions about luck, yet when a score of trials
or so are made, as in our supposed case of a twenty-first game, the chances are that
they would be contradicted by the event.The twenty constant winners would not
be more lucky than the twenty constant losers; but neither would they be less lucky.
The chances are that about half would win and about half would lose.If one who
really understands the laws of probability could be supposed foolish enough to wager
money on either twenty, or on both, he would unquestionably regard the betting as
perfectly even.
Let us return to the rest of our twenty millions of players, though we need by no
means consider all the various classes into which they may be divided, for the number
of these classes amounts, in fact, to more than a million.
The great bulk of the twenty millions would consist of players who had won about
as many games as they had lost.The number who had wonexactlyas many games
as they had lost would no longer form a large proportion of the total, though it would
form the largest individual class.There would be nearly 3,700,000 of these, while
there would be about 3,400,000 who had won eleven and lost nine, and as many who
had won nine and lost eleven; these two classes together

would outnumber the winners
of ten games exactly, in the proportion of 20 to 11 or thereabouts. Speaking generally,
it may be said that about two-thirds of the community would consider they had had
neither good luck nor bad, though their opinion would depend on temperament in
part. For some men are more sensitive to losses than to gains, and are ready to speak
of themselves as unlucky, when a careful examination of their varying fortunes shows
that they have neither won nor lost on the whole, or have won rather more than they
have lost.On the other hand, there are some who are more exhilarated by success
than dashed by failure.
The number of those who, having begun with good luck, had eventually been so
markedly unfortunate, would be considerable.It might be taken to include all who
had won the first six games and lost all the rest, or who had won the first seven or
the first eight, or any number up to, say, the first fourteen, losing thence to the end;
and so estimated would amount to about 170, an equal number being first markedly
unfortunate, and then constantly fortunate. But the number who had experienced a
marked change of luck would be much greater if it were taken to include all who had
won a large proportion of the first nine or ten games and lost a large proportion of
the remainder, orvice versˆa. These two classes of players would be well represented.

Thus, then, we see that, setting enough persons playing at

any game of pure
chance, and assuming only that among any large number of players there will be
about as many winners as losers, irrespective of luck, good or bad, all the five classes
which gambling folk recognise and regard as proving the existence of luck,must
inevitably make their appearance.
Even any special class which some believer in luck, who was more or less fanciful,
imagined he had recognised among gambling folk, must inevitably appear among our
twenty millions of illustrative players. For example, there would be about a score of
players who would have won the first game, lost the second, won the third, and so on
alternately to the end; and as many who had also won and lost alternate games, but
had lost the first game; some forty, therefore, whose fortune it seemed to be to win
only after they had lost and to lose only after they had won.Again, about twenty
would win the first five games, lose the next five, win the third five, and lose the last
five; and about twenty more would lose the first five, win the next, lose the third five,
and win the last five: about forty players, therefore, who seemed bound to win and
lose always five games, and no more, in succession.
Again, if anyone had made a prediction that among the players of the twenty
games there would be one who would win the first, then lose two, then win three,
then lose four, then win five, and then lose the remaining five—and yet a sixth if
the twenty-first game were played—that prophet would

certainly be justified by the
result. For about a score would be sure to have just such fortunes as he had indicated
up to the twentieth game, and of these, nine or ten would be (practically) sure to win
the twenty-first game also.
Wesee,then,thatallthedifferentkindsofluck—good,bad,indifferent,or
changing—which believers in luck recognise,are bound to appear when any con-
siderable number of trials are made; and all the varied ideas which men have formed
respecting fortune and her ways are bound to be confirmed.
It may be asked by some whether this is not proving that there is such a thing
as luck instead of over-throwing the idea of luck. But such a question can only arise
from a confusion of ideas as to what is meant by luck.If it be merely asserted that
such and such men have been lucky or unlucky, no one need dispute the proposition;
for among the millions of millions of millions of purely fortuitous events affecting
the millions of persons now living, it could not but chance that the most remarkable
combinations, sequences, alternations, and so forth, of events, lucky or unlucky, must
have presented themselves in the careers of hundreds. Our illustrative case, artificial
though it may seem, is in reality not merely an illustration of life and its chances,
but may be regarded as legitimately demonstrating what must inevitably happen on
the wider arena and amid the infinitely multiplied vicissitudes of life. But the belief

in luck involves much more. The idea involved in it, if not openly expressed (usually
expressed very freely), is that some men are lucky by nature, others unlucky, that
such and such times and seasons are lucky or unlucky, that the progress of events may
be modified by the lucky or unlucky influence of actions in no way relating to them;
as, for instance, that success or failure at cards may be affected by the choice of a
seat, or by turning round thrice in the seat.This form of belief in luck is not only
akin to superstition, itissuperstition.Like all superstition, it is mischievous.It is,
indeed, the very essence of the gambling spirit, a spirit so demoralising that it blinds
men to the innate immorality of gambling. It is this belief in luck, as something which
can be relied on, or propitiated, or influenced by such and such practices, which is
shown, by reasoning and experience alike, to be entirely inconsistent not only with
facts but with possibility.
But oddly enough, the believers in luck show by the form which their belief takes
that in reality they have no faith in luck any more than men really have faith in
superstitions which yet they allow to influence their conduct.A superstition is an
idle dread, or an equally idle hope, not a real faith; and in like manner is it with
luck.A man will tell you that at cards, for instance, he always has such and such
luck; but if you say, ‘Let us have a few games to see whether you will have your
usual luck,’ you will usually find him unwilling to let you

apply the test.If you try
it, and the result is unfavourable, he argues that such peculiarities of luck never do
show themselves when submitted to test. On the other hand, if it so chances that on
that particular occasion he has the kind of luck which he claims to havealways, he
expects you to accept the evidence as decisive.Yet the result means in reality only
that certain events, the chances for and against which were probably pretty equally
divided, have taken place.
So, if a gambler has the notion (which seems to the student of science to imply
something little short of imbecility of mind) that turning round thrice in his chair will
change the luck, he is by no means corrected of the superstition by finding the process
fail on any particular occasion.But if the bad luck which has hitherto pursued him
chances (which it is quite as likely to do as not) to be replaced by good or even by
moderate luck, after the gambler has gone through the mystic process described, or
some other equally absurd and irrelevant manœuvre, then the superstition is con-
firmed. Yet all the time there is no real faith in it. Such practices are like the absurd
invocation of Indian ‘medicine men’; there is a sort of vague hope that something
good may come of them, no real faith in their efficacy.
The best proof of the utter absence of real faith in superstitions about luck, even
among gambling men, the most superstitious of mankind, may be found in the incon-
gruity of their two leading ideas. If there are two forms of

expression more frequently
than any others in the mouth of gambling men, they are those which relate to being
in luck or out of luck on the one hand, and to the idea that luck must change on the
other.Professional gamblers, like Steinmetz and his kind, have become so satisfied
that these ideas are sound, whatever else may be unsound, in regard to luck, that
they have invented technical expressions to present these theories of theirs, failing
utterly to notice that the ideas are inconsistent with each other, and cannot both be
right—though both may be wrong, and are so.
A player is said to be ‘in the vein’ when he has for some time been fortunate. He
should only go on playing, if he is wise, at such a time, and at such a time only should
he be backed.Having been lucky he is likely, according to this notion, to continue
lucky. But, on the other hand, the theory called ‘the maturity of the chances’ teaches
that the luck cannot continue more than a certain time in one direction; when it has
reached maturity in that direction it must change. Therefore, when a man has been
‘in the vein’ for a certain time (unfortunately no Steinmetz can say precisely how
long), it is unsafe to back him, for he must be on the verge of a change of luck.
Of course the gambler is confirmed in his superstition, whichever event may befall
in such cases.When he wins he applauds himself for following the luck, or for duly
anticipating a change of luck, as the case may be; when he loses, he simply regrets

his folly in not seeing that the luck must change, or in not standing by the winner.
And with regard to the idea that luck must change, and that in the long run events
must run even, it is noteworthy how few gambling men recognise either, on the one
hand, how inconsistent this idea is with their belief in luck which may be trusted (or,
in their slang, may be safely backed), or, on the other hand, the real way in which
luck ‘comes even’ after a sufficiently long run.
A man who has played long with success goes on because he regards himself as
lucky. A man who has played long without success goes on because he considers that
the luck is bound to change.The latter goes on with the idea that, if he only plays
long enough, he must at least at some time or other recover his losses.
Now there can be no manner of doubt that if a man, possessed of sufficient means,
goes on playing for a very long time, his gains and losses will eventually be very nearly
equal; assuming always, of course, that he is not swindled —which, as we are dealing
with gambling men, is perhaps a sufficiently bold assumption.Yet it by no means
follows that, if he starts with considerable losses, he will ever recover the sum he has
thus had to part with, or that his losses may not be considerably increased.This
sounds like a paradox; but in reality the real paradox lies in the opposite view.
This may be readily shown.
The idea to be controverted is this: that if a gambler plays long enough there must

come a time when his gains and his losses are exactly balanced.Of course, if this
were true, it would be a very strong argument against gambling; for what but loss of
time can be the result of following a course which must inevitably lead you, if you go
on long enough, to the place from which you started?But it is not true.If it were
true, of course it involves the inference that, no matter when you enter on a course of
gambling, you are bound after a certain time to find yourself where you were at that
beginning. It follows that if (which is certainly possible) you lose considerably in the
first few weeks or months of your gambling career, then, if you only play long enough
you must inevitably find yourself as great a loser, on the whole, as you were when you
were thus in arrears through gambling losses; for your play may be quite as properly
considered to have begun when those losses had just been incurred, as to have begun
at any other time.Hence this idea that, in the long run, the luck must run even,
involves the conclusion that, if you are a loser or a gainer in the beginning of your
play, you must at some time or other be equally a gainer or loser. This is manifestly
inconsistent with the idea that long-continued play will inevitably leave you neither a
loser nor a gainer. If, starting from a certain point when you are a thousand pounds
in arrears, you are certain some time or other, if you only play long enough, to have
gained back that thousand pounds, it is obvious that you are equally certain some

time or other (from that same starting-point) to be yet another thousand pounds in
arrears. For there is no line of argument to prove you must regain it, which will not
equally prove that some time or other you must be a loser by that same amount, over
and above what you had already lost when beginning the games which were to put
you right.If, then, you are to come straight, you must be able certainly to recover
two thousand pounds, and by parity of reasoning four thousand, and again twice that;
and so onad infinitum: which is manifestly absurd.
The real fact is, that while the laws of probabilities do undoubtedly assure the
gambler that his losses and gains will in the long run be nearly equal, the kind of
equality thus approached is not an equality of actual amount, but of proportion.If
two men keep on tossing for sovereigns, it becomes more and more unlikely, the longer
they toss, that the difference between them will fall short of any given sum.If they
go on till they have tossed twenty million times, the odds are heavily in favour of
one or the other being a loser of at least a thousand pounds.But the proportion of
the amount won by one altogether, to the amount won altogether by the other, is
almost certain to be very nearly a proportion of equality. Suppose, for example, that
at the end of twenty millions of tossings, one player is a winner of 1,000l., then he
must have won in all 10,000,500l., the other having won in all 9,999,500l. the ratio of
these amounts is that of 100005 to 99995, or 20001 to

19999. This is very nearly the
ratio of 10000 to 9999, or is scarcely distinguishable, practically, from actual equality.
Now if these men had only tossed eight times for sovereigns, it might very well have
happened that one would have won five or six times, while the other had only won
thrice or twice.Yet with a ratio of 5 to 3, or 3 to 1, against the loser, he would
actually be out of pocket only 2l. in one case and 4l. in the other; while in the other
case, with a ratio of almost perfect equality, he would be the loser of a thousand
pounds.
But now it might appear that, after all, this is proving too much, or, at any rate,
proves as much on one side as on the other; for if one player loses the other must
gain; if a certain set of players lose the rest gain: and it might seem as though, with
the prevalent ideas of many respecting gambling games, the chance of winning were
a sufficient compensation for the chance of losing.
Where a man is so foolish that the chance of having more money than he wants is
equivalent in his mind (or what serves him for a mind) to the risk of being deprived of
the power of getting what is necessary for himself and for his family, such reasoning
may be regarded as convincing. For those who weigh their wants and wishes rightly,
it has no value whatever.On the contrary it may be shown that every wager or
gambling transaction, by a man of moderate means, definitely reduces the actual
value of his possessions, even if the wager or transaction

be a fair one. If a man who
has a hundred pounds available to meet his present wants wagers 50l.against 50l.,
or an equal chance, he is no longer worth 100l. Hemay, when the bet is decided, be
worth 150l., or he may be worth only 50l. All he canestimatehis property at is about
87l. Supposing the other man to be in the same position, they are both impoverished
as soon as they have made the bet; and when the wager is decided, the average value
of their possessions in ready money is less than it was; for the winner gains less by
having his 100l.raised to 150l.(or increased as 2 to 3), than the loser suffers by
having his ready money halved.
Similar remarks apply to participation in lottery schemes, or the various forms of
gambling at places like San Carlo. Every sum wagered means, at the moment when
it is staked, a depreciation of the gambler’s property; and would mean that, even
if the terms on which the wagering were conducted were strictly fair.But this is
never the case. In all lotteries and in all established systems of gambling certain odds
are always retained in favour of those who work the lottery or the gambling system.
These odds make gambling in either form still more injurious to those who take part
in it. Winners of course there are, and in some few cases winners may retain a large
part of their gains, or at any rate expend them otherwise than in fresh gambling. Yet
it is manifest that, apart from the circumstance that theeffectsof the gambling gains