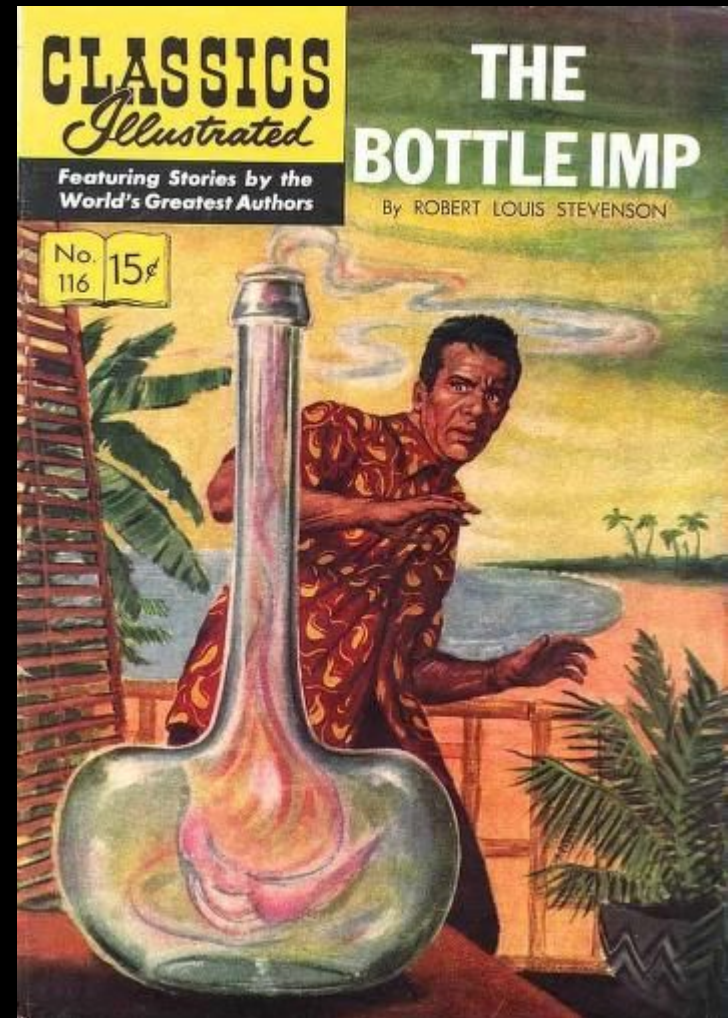


THE BOTTLE IMP

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MathsJam 2019



THE BOTTLE IMP RULES

- GRANTS WISHES
(BUT CANNOT PROLONG LIFE).
- IF YOU DIE OWNING THE BOTTLE,
YOU GO TO HELL FOR ALL ETERNITY.
- YOU CAN ONLY GET RID OF THE BOTTLE
BY SELLING IT FOR A PRICE LESS THAN
YOU PAID FOR IT.

IF ANY MAN BUYS THIS BOTTLE THE IMP IS AT HIS COMMAND; ALL THAT HE DESIRES — LOVE, FAME, MONEY, HOUSES LIKE THIS HOUSE, AY, OR A CITY LIKE THIS CITY — ALL ARE HIS AT THE WORD UTTERED.

THERE IS ONE THING THE IMP CANNOT DO — HE CANNOT PROLONG LIFE; AND, IT WOULD NOT BE FAIR TO CONCEAL FROM YOU, THERE IS A DRAWBACK TO THE BOTTLE; FOR IF A MAN DIE BEFORE HE SELLS IT, HE MUST BURN IN HELL FOREVER.

IT CANNOT BE SOLD AT ALL, UNLESS SOLD AT A LOSS. IF YOU SELL IT FOR AS MUCH AS YOU PAID FOR IT, BACK IT COMES TO YOU AGAIN LIKE A HOMING PIGEON. IT FOLLOWS THAT THE PRICE HAS KEPT FALLING IN THESE CENTURIES, AND THE BOTTLE IS NOW REMARKABLY CHEAP.

THE PARADOX

- NO-ONE SHOULD BUY THE BOTTLE FOR **ONE CENT**.
 - NO-ONE CAN SELL THE BOTTLE FOR LESS THAN A CENT.
- NO-ONE SHOULD BUY THE BOTTLE FOR **TWO CENTS**.
 - BY ABOVE, YOU WON'T BE ABLE TO SELL IT FOR ONE CENT.
- NO-ONE SHOULD BUY THE BOTTLE FOR **THREE CENTS**.
 - ...
- NO-ONE SHOULD BUY THE BOTTLE FOR **FIFTY DOLLARS**.

SORITES PARADOX

- A MILLION GRAINS OF SAND IS A HEAP.
- TAKING A GRAIN OUT OF A HEAP OF SAND STILL LEAVES A HEAP.
- So 999,999 GRAINS IS STILL A HEAP
- ...
- So ONE GRAIN OF SAND IS A HEAP!?

THE UNEXPECTED HANGING (OR SURPRISE EXAMINATION) IS A FAMOUS EXAMPLE.



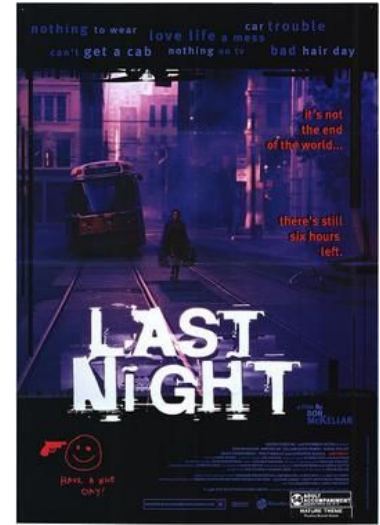
FIVE YEARS, THAT'S ALL WE'VE GOT

HOW FAR IN THE FUTURE DOES AN APOCALYPSE HAVE TO BE FOR SOCIETY TO COLLAPSE, WHEN ACTIONS HAVE NO CONSEQUENCES (PANIC & RIOTING, ETC.)?

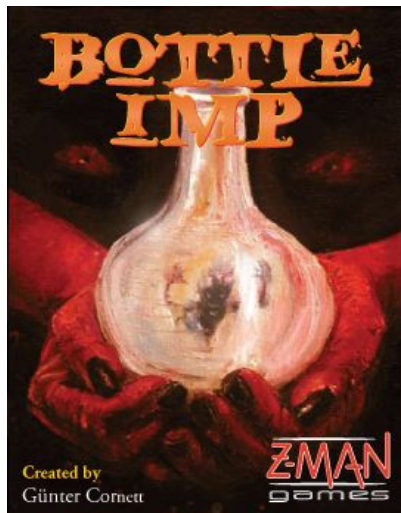
- SURELY SOCIETY COLLAPSES WHEN THE APOCALYPSE IS A DAY AWAY?
- WILL SOCIETY COLLAPSE FIVE YEARS BEFORE AN IMPENDING APOCALYPSE?
- HOW ABOUT FIFTY YEARS? FIVE THOUSAND? FIVE BILLION YEARS?

THE SITUATION INVOLVES EVERYONE ANTICIPATING EVERYONE ELSE'S REACTIONS, A BIT LIKE SELLING THE BOTTLE IMP.

A CLOSER-TO-HOME EXAMPLE IS HOW PEOPLE DECIDE WHEN THE 'END-GAME' OF A BOARD GAME IS. WHEN TO STOP 'EXPLORING' AND START 'EXPLOITING'.



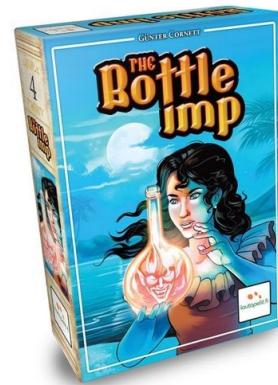
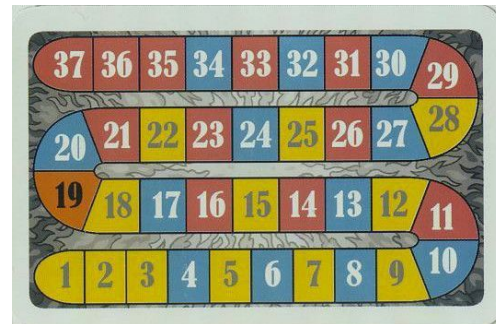
THE BOTTLE IMP GAME



TRICK-TAKING GAME: FOLLOW SUIT (IF YOU CAN), AND THE HIGHEST CARD WINS THE TRICK.

UNLESS: SOMEONE PLAYS A CARD WITH A VALUE LESS THAN THE CURRENT VALUE OF THE BOTTLE. THESE CARDS ACT AS TRUMPS — THE HIGHEST OF THEM BUYS THE BOTTLE, AND WINS THE TRICK.

BUT IF YOU END THE ROUND WITH THE BOTTLE YOU SCORE NOTHING... AND GET A PENALTY.



LINKS AND REFERENCES

The Bottle Imp (RL Stevenson): [Full text](#) ([Full text alternative](#))

The Bottle-Imp (an earlier telling of the tale):

<https://archive.org/details/populartalesroma01musaiala/page/64>

“Tempered in the flames of hell”: a review of similar tales:

<http://helengrantbooks.blogspot.com/2014/03/tempered-in-flames-of-hell-bottle-imp.html>

Bottle Imp (card game): <https://boardgamegeek.com/boardgame/619/bottle-imp>

[Sorites paradox](#) (and the [Unexpected Hanging paradox](#))

[Last Night \(1998 film\)](#) for an exploration of final reactions about the apocalypse.