BIDIRECTIONAL RESEARCH

(ILLUSTRATED USING AN UNCONVENTIONAL EXAMPLE)

DIGRA/FDG JOINT CONFERENCE

4TH AUGUST, 2016

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- AS THIS IS A **JOINT** CONFERENCE TO PROMOTE THE **EXCHANGING** OF **IDEAS** ABOUT DIGITAL GAMES, I THOUGHT I'D DO JUST **THAT**

- I'M GOING TO **DO** IT USING AN **EXAMPLE** WHICH IS, FRANKLY **BONKERS**
  - ALTHOUGH I'VE ACTUALLY BEEN **THINKING** ABOUT OVER THE COURSE OF SEVERAL **DECADES**

- MY **AIM** IS TO SHOW THAT **RESEARCH** IN GAMES CAN HELP **OTHER** DISCIPLINES IN A WAY IT **DOESN'T** AT THE MOMENT
 - WHILE NOT GETTING THINGS **THROWN** AT ME

- IN **GENERAL**, WHAT IS A RESEARCHER'S RELATIONSHIP WITH **ANOTHER** DISCIPLINE, **X**?
- **NONE** – THEY STAY IN THEIR HOME DISCIPLINE
- **IMPORT**
  - USE **X** TO EXPAND OR IMPROVE THEIR HOME DISCIPLINE
  - "HMM, BIOLOGY'S NEUROSCIENCE COULD HELP MY AI"
- **EXPORT**
  - USE THEIR HOME DISCIPLINE TO EXPAND OR IMPROVE **X**
  - "HEY, PHYSICS, TRY USING MY TENSOR FLOWS"

- SUPPOSE ✖ IS COMMERCIAL **GAMES** RESEARCH

- **IMPORTING** GAMES THEORY AND PRACTICE TO HOME:

  – WHAT THEORIES OF ECONOMICS, **GENDER** STUDIES, PSYCHOLOGY, LAW EXPLAIN THIS SITUATION?

  – **GAMIFICATION**, AI, **SERIOUS** GAMES, ...

- **EXPORTING** HOME THEORY AND PRACTICE TO GAMES:

  – CALL **THAT** STORY/ECONOMICS/COMMUNITY? **THIS** IS STORY/ECONOMICS/COMMUNITY!

  – GAME **STUDIES**, LITERATURE, FILM, ANIMATION, ...

- THIS IS FOR ALL YOU OLD-TIMERS OUT THERE...
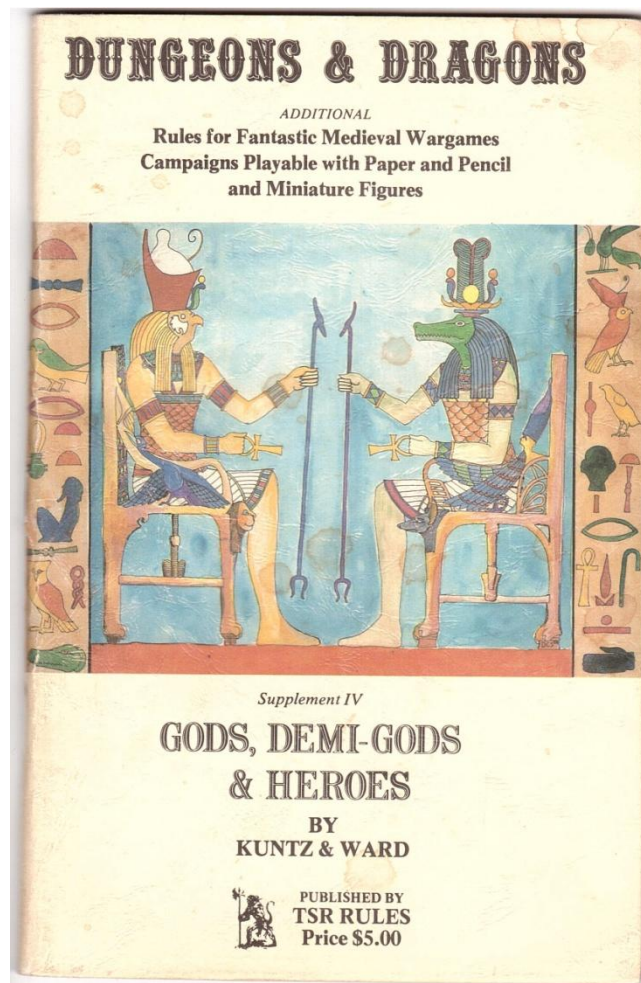
- THE IMPORT/EXPORT METAPHOR **SEEMS** TO COVER ALL EVENTUALITIES, BUT IT **DOESN'T**
- IF YOU LOOK AT A **DIFFERENT** FIELD THROUGH THE LENS OF YOUR **OWN** FIELD, YOU ONLY SEE **ONE** SIDE OF THE COIN
  - YOU ONLY GET ANSWERS TO QUESTIONS YOU **ASK**
  - YOU WON'T EVEN **SEE** THE QUESTIONS THAT A PRACTITIONER OF THE **OTHER** FIELD WOULD ASK
- EXAMPLE: EXTENSIVE STUDY OF THE MATHEMATICS OF **ART** TELLS YOU LITTLE ABOUT THE ART OF **MATHEMATICS**

- WHAT IF YOUR **HOME** RESEARCH DISCIPLINE IS **GAMES** AND **✖** IS SOME **OTHER** DISCIPLINE?

- YOU CAN:

  - WORK ONLY IN GAMES, IGNORING **✖**

  - **IMPORT** IDEAS FROM **✖** TO EXPAND AND IMPROVE UNDERSTANDING OF GAMES

  - **EXPORT** IDEAS FROM GAMES TO EXPAND AND IMPROVE UNDERSTANDING OF **✖**

- GAMES RESEARCHERS ALMOST **ALWAYS** ONLY DO THE ONES IN **BLUE**

  - THEY **DON'T** APPLY GAMES TO **OTHER** DISCIPLINES

- THE **REASON** FOR THIS **ISN'T** BECAUSE GAME RESEARCHERS ARE **SELFISH PARASITES**
  - THEY **MAY** BE, BUT IF SO IT'S IRRELEVANT
- IT'S BECAUSE THEY DON'T THINK THEY **KNOW** ENOUGH ABOUT OTHER DISCIPLINES
  - NOT THAT THIS EVER STOPPED PEOPLE **FROM** OTHER DISCIPLINES THINKING ABOUT **GAMES**
- WELL THEY NEED TO BE MORE **CONFIDENT**!
- YOU **CAN** USE GAMES TO BRING NEW **INSIGHTS** TO OTHER DISCIPLINES THAT PEOPLE LOOKING **AT** GAMES WOULDN'T **SEE**

- I'M GOING TO SPEND THE **REST** OF THIS TALK ILLUSTRATING THIS USING AN **EXAMPLE**
- IT CONCERNS WHAT DESIGNERS AND DEVELOPERS HAVE LEARNED FROM **MMORPGS**
  - BECAUSE WHY WOULD I CHOOSE SOMETHING **ELSE**?
- I'M GOING TO **USE** THIS KNOWLEDGE TO TALK ABOUT A DISCIPLINE THAT THE ATTENDANCE LIST TELLS ME **NO-ONE** HERE IS AN **EXPERT** IN
- THAT DISCIPLINE IS **THEOLOGY**

- [PAUSE FOR UNEASY **SILENCE**]

- SO, **I** AM A **GOD**
  - IF NOT A THEOLOGIST
- I'VE **BEEN** A GOD FOR **38 YEARS** SO FAR
  - THIS IS IN ACTUAL **PRACTICE**, NOT IN THEORY
- UNFORTUNATELY FOR **ME**, ALTHOUGH I **AM** A GOD, I'M **NOT** A GOD OF *REALITY*
  - OR AT LEAST I'VE DISCOVERED NO **EVIDENCE** TO SUGGEST I AM
- NOTE: I'M NOT SAYING I'M A PARTICULAR DEITY CALLED **GOD**, I'M SAYING I'M **A** GOD
- SO WHAT **IS** "A GOD"?

- A **REALITY** IS A SELF-CONTAINED **SPACE** OF **EXISTENCE** GOVERNED BY A GIVEN SET OF PHYSICAL **LAWS** ("LAWS OF NATURE")
  - THE ONE WE **LIVE** IN, I'M CALLING *REALITY*
- A **GOD** IS A **BEING** WHO CAN **CHANGE** THE PHYSICAL LAWS OF A REALITY
  - **CREATORS** OF REALITIES ARE THEREFORE, BY DEFINITION, **GODS** OF THOSE REALITIES
- EXAMPLES:
  - **PTAH** OF ANCIENT EGYPT CREATED *REALITY*
  - ROY **TRUBSHAW** AND I CREATED *MUD*

- A **DEMI-GOD** CAN'T **CHANGE** THE LAWS OF PHYSICS, BUT HAS **ACCESS** TO PHYSICS NOT GENERALLY **AVAILABLE**

- MOST DEITIES IN **MYTH** ARE LIKE THIS
  - ZEUS DIDN'T **CREATE** *REALITY*, BUT HE DOES HAVE **POWERS** OVER *REALITY* NOT SHARED BY OTHERS
    - EG. HURLING LIGHTNING BOLTS
  - ODIN DIDN'T **CREATE** *REALITY*, BUT HE CAN **DO** THINGS OTHERS CAN'T
    - EG. GIVE HUMANS THE GIFT OF LIFE
  - **SUPERNATURAL** BEINGS SUCH AS GHOSTS, SUPERHEROES AND VAMPIRES ALSO FIT HERE

- A **HERO** IS A BEING FROM THE **SAME** REALITY AS A **GOD** OF A SUB-REALITY, WHO DESCENDS **INTO** THAT SUB-REALITY
  - THEY MAY HAVE **DEMI-GODLY** POWERS IN THAT SUB-REALITY
  - THEY MAY INDEED HAVE **GODLY** POWERS IN IT, BUT THAT'S **DANGEROUS**...

- AN **NPC** IS A BEING IN A **CREATED** REALITY WHO OPERATES **WITHIN** THAT REALITY USING ITS GENERAL ("NATURAL") LAWS OF PHYSICS
  - NPCS CAN'T TELL HEROES FROM NPCS **UNLESS** THE FORMER **USE** SUPERNATURAL PHYSICS

- REALITIES DON'T **HAVE** TO BE CREATED
  - THEY CAN HAVE **ALWAYS** EXISTED
  - FOR *REALITY*, THIS IS THE **BUDDHIST** AND **JAINIST** POINT OF VIEW
- THEY CAN ALSO SIMPLY **EMERGE** FROM CHAOS
  - CREATIO EX MATERIO
  - AS IN THE ANCIENT **GREEK** CREATION MYTH
- THEY CAN BE CREATED FROM **NOTHING** BY A BEING FROM A **HIGHER** REALITY
  - CREATIO EX NIHILO
  - **ABRAHAMIC** RELIGIONS TAKE THIS VIEW

- FINALLY, A GOD CAN **WILL** THEIR SELF **AND** THEIR REALITY INTO EXISTENCE TOGETHER
  - *CREATIO EX DEO* ... SORT OF
  - THIS IS WHAT **PTAH** DID
  - PTAH WAS APPARENTLY **UNCONCERNED** BY THE IMPLICATIONS OF GÖDEL'S INCOMPLETENESS THEOREM
- THERE **CAN** BE **MORE** THAN ONE CREATOR IN *CREATIO EX NIHILO*
  - VISHNU CREATED THE **WORLD**
  - BRAHMA CREATED THE **CONTENT**
    - ASIDE: ISN'T ENGLISH STRANGE?

- WHAT I'VE DESCRIBED SO FAR IS **WELL KNOWN** TO PHILOSOPHERS AND THEOLOGIANS
  - HENCE THE **LATIN**
- THIS IS ALL **THEORY** THOUGH
- THESE PEOPLE KNOW **NOTHING** ABOUT THE **PRACTICE** OF CREATING WORLDS
  - [ASIDE: OLD ACADEMIC JOKE. WHO COSTS LESS TO EMPLOY, A MATHEMATICIAN OR A THEOLOGIAN?]
- MMO DEVELOPERS **DO** KNOW WHAT'S INVOLVED IN **ACTUALLY** CREATING WORLDS!
- THIS CAN GIVE PHILOSOPHERS **NEW** INSIGHTS

- SO:
  - AN MMO **DESIGNER** IN *REALITY* CREATES A **SUB-REALITY** VIRTUAL WORLD
    - THIS MAKES THEM A **GOD** OF THAT WORLD
  - THEY **POPULATE** THEIR WORLD WITH AI-CONTROLLED **AGENTS**
    - THESE ARE ITS **NPCS**
  - **PLAYERS** FROM *REALITY* **ENTER** THE MMO
    - THESE ARE THE **HEROES**
  - CUSTOMER **SERVICE** REPS ARE EMPLOYED TO SORT OUT ANY **PROBLEMS**
    - THESE REPS ARE THE **DEMI-GODS**

- THE **SAME** STRUCTURE WORKS TAKING *REALITY* AS THE SUB-REALITY:
  - AN INDIVIDUAL IN A HIGHER REALITY CREATES *REALITY*
    - THEY'RE THE **GOD** OF *REALITY*
  - THEY POPULATE *REALITY* WITH **AIS**
    - THOSE AIS WOULD BE **US**, THEN...
  - **PLAYERS** FROM THE HIGHER REALITY ENTER *REALITY*
    - WE'D ONLY NOTICE IF THEY **WANTED** US TO NOTICE
  - **CSRS** DEAL WITH ANY DAY-TO-DAY **PROBLEMS**
    - ANGELS
    - GMS WHO RUN EVENTS FOR PLAYERS ARE MAYBE DEMONS

- MMO DEVELOPERS CREATE WORLDS *EX NIHILO*

- WHAT **THEY** KNOW ABOUT CREATING REALITIES IS **USEFUL** WHEN THINKING ABOUT ANY PRESUMED *EX NIHILO* CREATOR OF REALITY

- AT THE VERY **LEAST**, THIS **ILLUMINATES** SOME OF THE DECISIONS ANY HIGHER-ORDER CREATOR OF REALITY WOULD HAVE HAD TO MAKE
  - EXAMPLE: THE **REASON** THE PHYSICS OF MMOS MIMIC REALITY'S IS SO PLAYERS CAN **VISIT**
  - COULD THIS EXPLAIN **WHY** REALITY'S HUMANS MIGHT BE MADE IN THE IMAGE OF A CREATOR?

- THIS **ISN'T** ABOUT ANSWERING THE QUESTION "ARE WE LIVING IN A COMPUTER SIMULATION?"

- IT'S MORE ABOUT GAINING **INSIGHT** INTO THE **MIND** OF *REALITY*'S PRESUMED CREATOR(S)

- SURE, "ONE CANNOT KNOW THE MIND OF GOD"

  – BECAUSE, *PACE* PTAH, THE CREATOR OF *REALITY* WOULD HAVE TO BE IN THE **SEPARATE** REALITY WHERE *REALITY*'S **HARDWARE** IS LOCATED

- HOWEVER, ONE CAN **SPECULATE** BASED ON WHAT THE GODS WE HAVE **ACCESS** TO DO

  – THEOLOGY COULD BECOME A LABORATORY SUBJECT!

- SO WHY **DO** PEOPLE IN *REALITY* CREATE **SUB-REALITIES**, AND WHAT DOES THIS **IMPLY** ABOUT THE MOTIVES OF *REALITY*'S CREATOR?

- WELL THERE ARE **MANY** REASONS, INCLUDING:
  - TO MAKE **MONEY**, TYPICALLY FROM **PLAYERS**
    - WE'RE A **COMMERCIAL** PRODUCT (WITH PERMADEATH)
  - TO **TEACH** SOMETHING TO PLAYERS
    - WE'RE A **SERIOUS GAME** (SO NOT MUCH FUN)
  - TO TEACH SOMETHING TO PEOPLE WHO ARE LEARNING TO **MAKE** REALITIES
    - WE'RE A **STUDENT PROJECT** (AND OVER-SCOPED)

- CONTINUING THESE REASONS:

  - TO LEARN SOMETHING THROUGH **SIMULATION**

    - LET'S HOPE THE SIMULATION ISN'T **SWITCHED OFF** WHEN THE **RESULTS** COME THROUGH
    - MAYBE IT **IS** AND THEY OCCASIONALLY RELOAD US FROM A **SAVE FILE** FOR OLD TIME'S SAKE

  - OUT OF **CURIOSITY** TO SEE WHAT HAPPENS WHEN THE SUB-REALITY IS LEFT **RUNNING**

    - WE'RE A **FORMICARIUM** (DO THEY SOMETIMES STIR US UP WITH A **STICK**?)

  - FOR **FUN**

    - SO IT'S A **WORK-IN-PROGRESS** AND THE **BUGS** WILL BE FIXED NEXT PATCH

- **ALSO** BUGGY WORKS-IN-PROGRESS...
  - TO TEST OUT SOME **IDEAS**
  - TO **SHOWCASE** OUR DESIGN/DEVELOPMENT TALENT
  - AS A **PROOF** OF **CONCEPT**
- TO GIVE THE GIFT OF **EXISTENCE** TO NPCS
  - SO THEY'RE **MALE**, COMPENSATING FOR NOT BEING ABLE TO BEAR CHILDREN
    - AN **ACTUAL** ANTI-AI ARGUMENT FROM THE 1970S!
- BECAUSE *REALITY* **SUCKS**
  - **THIS** IS WHY ROY AND I CREATED **MUD**
    - IT HAS UNFORTUNATE IMPLICATIONS REGARDING **HEAVEN**

- TO AN **NPC** IN A SUB-WORLD OF *REALITY*, THAT SUB-WORLD APPEARS **SELF-CONTAINED**

- THERE IS NO REASON FOR THE NPC TO SUPPOSE THAT *REALITY* **EXISTS**

- OF COURSE, WE CAN **ENTER** THEIR WORLD USING OUR **PLAYER CHARACTERS** AND **TELL** THEM ABOUT *REALITY*

  – WHY WOULD THEY EVER **BELIEVE** US, THOUGH?

  – AND WHY WOULD WE EVER **DO** THAT ANYWAY?

  – OR, ALTERNATIVELY, WHY WOULDN'T WE DO IT **THE WHOLE TIME**?

- THE NPC COULD ALSO **LOOK** AT THE WORLD AROUND THEM AND **POSTULATE** THAT IT WAS CREATED BY SOME **HIGHER BEING**
  - THEY'D BE **CORRECT** TOO – **WE** ARE THOSE HIGHER BEINGS
- THEY COULD **FURTHER** REASON THAT THEY WERE **MODELLED** ON THAT HIGHER BEING
  - **ALSO** CORRECT, FOR THE REASONS I GAVE EARLIER
- THEY MIGHT **REASONABLY** SUPPOSE THE HIGHER BEING **WATCHES OVER** THEM
  - **AGAIN**, CORRECT

- HOWEVER, THEY WOULD BE COMPLETELY **INCORRECT** AS TO:
  - THE **NATURE** OF THAT HIGHER BEING
  - WHAT THE HIGHER BEING'S **WORLD** IS LIKE
  - **WHY** THE HIGHER BEING **CREATED** THEIR REALITY
  - PRETTY MUCH EVERYTHING **ELSE**, TOO

- THE **SMARTEST** NPCS MIGHT FIGURE THAT WITH NO **EVIDENCE** TO SUGGEST THERE **IS** A HIGHER BEING, THEN RATIONALLY THERE PROBABLY **ISN'T** ONE
  - **ATHEIST** NPCS – WHO ARE **WRONG**!

- NPC ATHEISTS **DO** HAVE A POINT: EXISTENCE IS **RELATIVE**

- I EXIST IN **MY** REALITY, *REALITY*, BY DEFINITION

- DO I **EXIST** IN ANY REALITY I **CREATE**?
  - WHEN I **VISIT** THAT REALITY, SURE, I EXIST THERE **THEN**
  - DO I EXIST IN IT WHEN I'M **NOT** VISITING IT, THOUGH?

- DO I EXIST IN IT WHEN I MAKE **CHANGES** TO THEIR REALITY FROM *REALITY* ?
  - THEY CAN DEDUCE I EXIST IN **MY** REALITY, IF NOT **THEIRS**
  - THEY COULD **ALSO** BUILD UP AN HYPOTHETICAL **PICTURE** OF ME BASED ON MY SUPERNATURAL **INTERVENTIONS**
    - WHICH MIGHT NOT ACTUALLY **BE** SUPERNATURAL INTERVENTIONS

NON-EXISTENCE

- WHAT IF I **CAN** CHANGE A WORLD'S PHYSICS, BUT **NEVER DO**?
- DO I **EXIST** IN THAT REALITY **THEN**?
- WELL, FOR ALL INTENTS AND PURPOSES, **NO**: I **DON'T** EXIST IN THAT REALITY
- DO **YOU**, WHO HAVE NEVER **PLAYED** MUD AND WOULD TAKE **TIME** TO LEARN HOW TO ALTER ITS PHYSICS, **EXIST** RELATIVE TO ITS NPCS?
  - WELL NO, YOU **DON'T** – EVEN THOUGH IN *REALITY* YOU PLAINLY **DO** EXIST!
- IF A GOD DOESN'T **VISIT** A REALITY AND DOESN'T **CHANGE** IT, THAT GOD **DOESN'T EXIST** IN THAT REALITY

- I **COULD** SAY A LOT **MORE** HERE, BUT I RAN OUT OF **TIME** A WHILE AGO...
  - HMM, WHAT DO **DESIGNERS** THINK ABOUT THE **DESIGN** (OR OTHERWISE) OF *REALITY*?
- I'VE ATTEMPTED **NOT** TO SAY ANYTHING **TOO** CONTENTIOUS FOR THE RELIGIOUS AMONG YOU
  - I DON'T WANT PTAH WORSHIPPERS **TROLLING** ME
- THE **POINT** IS, THE KNOWLEDGE GAINED FROM MMO DEVELOPMENT CAN BE USEFUL **BEYOND** MMO DEVELOPMENT
- THIS APPLIES TO GAME RESEARCH IN **GENERAL**

- PEOPLE WHO RESEARCH, DESIGN AND DEVELOP **GAMES** HAVE DEVELOPED **THEORIES** BASED ON THEIR **PRACTICE**

- THEY HAVE **NOT** APPLIED THESE THEORIES **BEYOND** THEIR OWN FIELD

- OTHER FIELDS **ROUTINELY** EXAMINE DIFFERENT DOMAINS OF RESEARCH THROUGH THE **LENS** OF THEIR OWN RESEARCH

- GAME CREATORS AND RESEARCHERS ARE NOW IN A POSITION TO **DO THE SAME**