

The Collage Of Theodolitics

21 Gidouille 149 St Spéculum, confesseur

Chirality Of Imaginary Friends (Research Report)

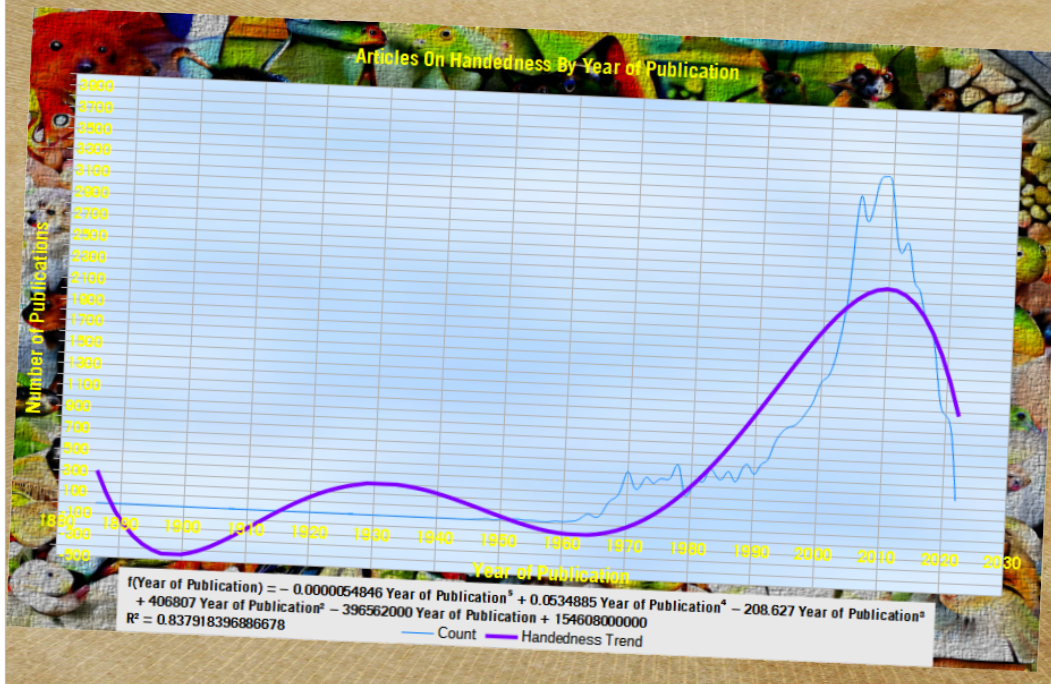
A Theodolite, being an instrument of measurement betokens Departmental measurements. Thus, the Collage of Theodolitics exists as a pressing need for such a Collage has been discerned.

The instrument to be considered is for the measurement of the handedness, the chirality, of Imaginary Friends.

This is an initial study of Research in progress.

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- Important graph!
- Exciting Equation
- Graphic Design Nightmare
- Peak Handedness 2010
- Problematic negative counts
(1888-1914)
(1953-1969)

The body of knowledge around academic knowledge includes some kind of citation record.

If something does not have a lot of articles written about it then it ceases to exist. This is, of course, the kind of matter considered in the Academic Handbook: The Hunting Of The Snark.

The single most enduring remark is that the Graphic Design is exorcable. Truly hideous.

By manipulation of the data set and exciting equation it was possible to induce negative articles about handedness from 1888-1914. The period begun by Jack the Ripper and ended by Gavril Princeps.

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**“Handedness” Search gave
60,868 results (December 2019)**

Synthetic meta-analysis

(Papadatou-Pastou, M., Rtolka, G., Schmitz, J., Martin, M., Munafo, M. R., Ecklenburg, S., & Paracchini, S.
(2019, April 23).

Human handedness: A meta-analysis.
<https://doi.org/10.1037/bul0000229>)

Serious researchers have created a synthetic meta-analysis of 60,868 articles which analyse handedness. The researchers have identified that the 1971 Neurophysiologica article by Oldfield is the key text for determining handedness.

The repeated use, largely of Oldfield has resulted in a range of fairly reliable estimates of the values of the number of persons who are left handed, right handed, and ambidextrous.

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- Distracting Face
- No Equation
- Graphic Design Disaster
- Apparently:
 - 1) Large sample size
 - 2) Confidence > 95%
 - 3) Widely quoted range
 - 4) Widely quoted best estimate

Papadatou-Pastou et al. Meta-analysis (n=1,787,629)

It is at this point that the Graphic Design Disaster becomes more than merely apparent.

However, Papadatou-Pastou et al, as researchers have created a synthetic sample size in the order of two million. This has led to a reliable guide as to handedness at the 95% Confidence Level.

The null hypothesis is that there is no real difference between Real People and Imaginary Friends in respect of handedness. This null hypothesis is rejected on principle.

The work of Papadatou-Pastou et al., rather, provides a guide to making a plausible claim for investigation. In this respect it is about identification of a research question.

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Current **S**tate **O**f **R**esearch **S**uggests

~10% Left Handed
80% Right Handed
~10% Ambidextrous

But: **O**nly **I**n **H**umans

The consensus of the existing research applies only to humans and gives an approximation of one in ten people being left handed while the balance are right handed. This glosses over the nature of ambidexterity – something remarked upon in the literature as being problematic.

For Imaginary Friends there are enough problems without taking on the problems of real persons too. For this reason, Ambidexterity is not considered to be a central methodological consideration. That is to say, ambidexterity is not observed significantly cross species which is grounds for more research being required.

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- Graphic Design Disaster.
- Canid and Felid equality.
- Appropriate handedness.
- Handedness is not just for people.

36-46% Cats Left Pawed
31-53% Dogs Left Pawed
(Ocklenberg et al. 2019)



Ocklenberg has identified that cats and dogs are habitually left or right pawed. The literature is, in this respect, a little shy of mentioning ambidextrous hounds. Who wouldn't be?

This shyness suggests that ambidexterity might be a confounding factor. Ensuring any hidden confounding is highlighted the initial five point Lickert Scale was modified to elicit error amplifying responses.

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Assessing Handedness: standardised Edinburgh Inventory

"The assessment and analysis of handedness: the Edinburgh Inventory." Oldfield, R.C., Neuropsychologia. 9(1):97-113. 1971.

Twenty Standard Questions

With a minimal question inventory.
The minimal inventory was adapted.

1. Your Imaginary Friend Is Writing A Manifesto.
2. Your Imaginary Friend Is Throwing Stones.
3. Your Imaginary Friend Is Cleaning Their Teeth.
4. Your Imaginary Friend Is Eating A Bowl Of Porridge.

The original Edinburgh Inventory contains 20 questions. Which is a little too extensive for the attention spans of people on the Internet and for the purpose of discovering the scope of the proposed future question to be investigated.

The questions used were a minimal set of questions which are presented as being cross culturally reliable. This is a contentious point as there is a healthy literature attesting that the Edinburgh Inventory is not always applied correctly.

The correct use of the Edinburgh Inventory is discussed elsewhere. By someone else.

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Questioned Administered Across Internet (June 2022)

I think this 5-point Likert scale question is an excellent survey question style

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

Question responses were Six Item Likert Scales

Always Left Hand

Either Hand, Prefers Left

Either Hand

Either Hand, Prefers Right

Always Right

None Of The Above

I prefer 7-point Likert scales over their 5-point brethren

Strongly Disagree

Disagree

Somewhat Disagree

Neutral

Somewhat Agree

Agree

Strongly Agree

The Questions were administered over the Internet in June 2022 among several groups

Surrealerpool,
Imaginary Friends Reunited site users
Runescape MMO Game Players
Random Internet users from Reddit
A range of Twitter Users

The only data collected were the responses to the four questions and the time of day of submission. This ensured ethical data collection within the strictures of GDPR. It is also, undoubtably, a source of confounding factors for high standards of accuracy and precision.

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RESULTS



The interesting thing is that there were actual results.

And continued poor graphic design and presentation.

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1097 Responses

This is a sufficient response sample to say $\hat{p} \pm z \sqrt{\hat{p}(1-\hat{p})/n}$

Which translates as

There is a 99.9% chance that the real value of what is being measured is within $\pm 4.97\%$ of the measured values.

And a 95% chance that the real value of what is being measured is within $\pm 2.96\%$ of the measured value.

There were 1097 responses.

This was a sufficient sample size to say that it is possible to draw some inferences at the 99.9% level and at the 95% level.

The purpose of this is not to determine a definite number or percentage or proportion of Imaginary Friends who are Left or Right Handed but to establish that this is a sensible question to ask. That there is some kind of empirical grounding for asking personal questions about Imaginary Friends.

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RESULTS

The kind of results obtained were consistent across respondents. There were no lost or abandoned response sessions resulting in partial returns.

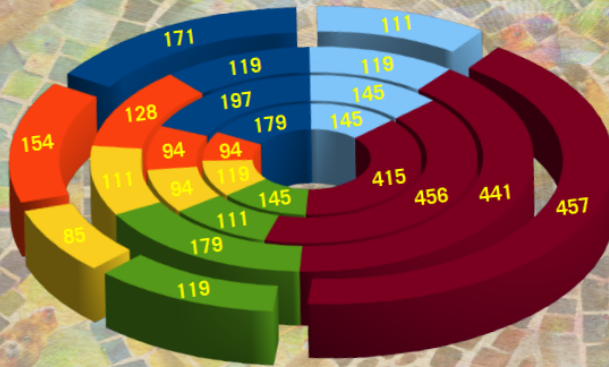
This suggests, methodologically, that asking a short amount of questions – the total abbreviated inventory took less than a minute to complete – would result in higher rates of return.

This is a reasonable informal conclusion as it suggests that to obtain better survey returns that the principle of Keeping It Simple Stupid has a certain amount of sense. That future methodological development should keep simplicity paramount in order to maximise return rates. This would not necessarily result in data quality.

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Abbreviated Edinburgh Handedness Responses
(n=1097) Raw Data



Graphic Design Nightmare
Less distracting face
Unclear Conclusions
The visualisation is poor

But there is a handy dandy equation and it is respectable

Despite continued poor graphic design and a reduction in the distractingness of the face the initial data set is not that amenable to clear conclusions. This is not a fault of the graphic design but of the data structuring.

The None Of The Above item on the choice scale amplified the inferred error rate. This suggests that the original question null hypothesis – rejected as a matter of principle – would never have survived serious analysis with T-Tests, Fischer's Gubbins or Chi-Squared and so on. Not even the distracting poor graphic design could rescue the data.

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The assessment and analysis of handedness: The Edinburgh inventory.
Oldfield RC.
Neuropsychologia. 1971; 9: 97-113.

The Laterality Quotient value is used to interpret handedness as follows:

Left-handedness < -40
-40 < Ambidexterity < +40
Right-handedness > +40

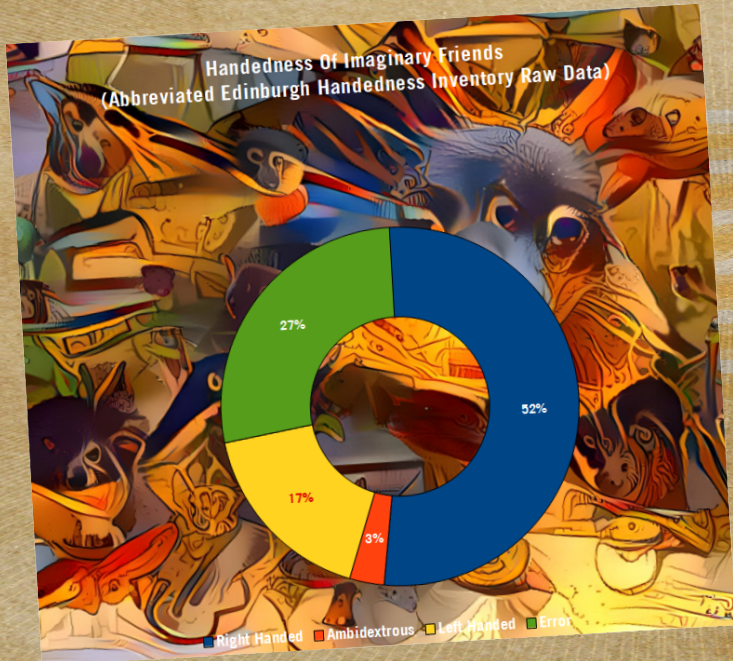
What did seem reasonable was that, with the removal of the Non Of The Above amplified errors, that the remaining data set would be amenable to analysis by the use of the standard Laterality metric of Oldfield.

Given the reduction in the size of the dataset there would be a clear lowering of the confidence level that can be claimed for the data.

This could be held to infer that further study is needed.

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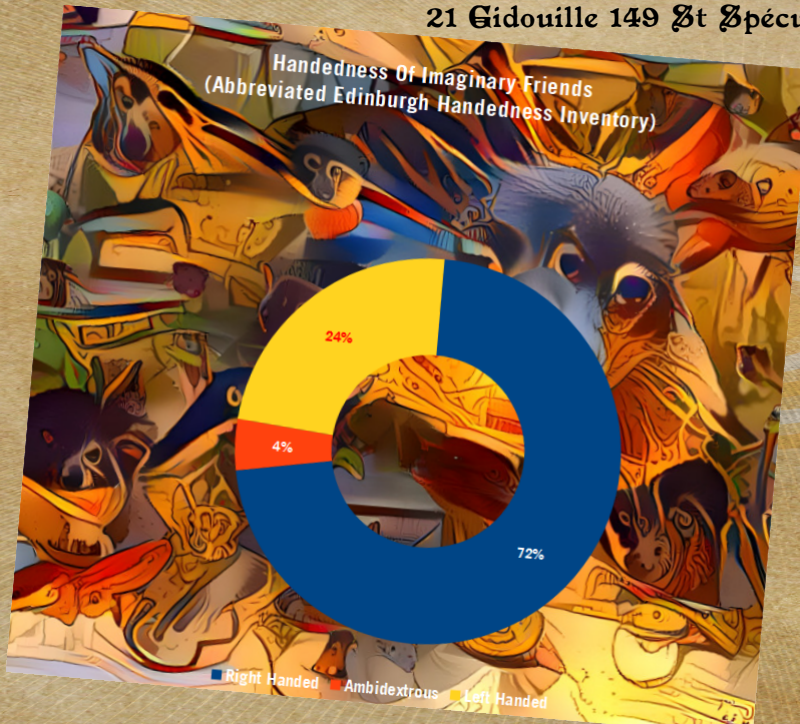
Graphic Design Nightmare
Secret Laterality Formula
Error rate of 27%

The initial results show a 27% Error rate. Which suggests a larger data sample might be needed when collecting Internet data. Which supports the anecdotal claim that the Internet is full of unreliable Narrators.

Liars. The Internet is full of Liars. Let's not dress it up.

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**Graphic Design Nightmare
Secret Laterality Formula
Obvious Error Data removed
"None Of The Above"**

**Left Handed 24%
Right Handed 72%
Ambidextrous 4%**

The Graphic Design Nightmare continues. The Secret Laterality Formula has been applied and the removal of "None Of The Above" seems to bring the data analysis closer to that accepted for real people.

There is an apparent difference between Imaginary Peoples' handedness and Real Peoples' handedness. This suggests that using a straight translation of research methods from Real People to Imaginary People is not appropriate. More research is, therefore, required.

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CONCLUSIONS

There were actual conclusions.

These are going to be long, tedious and detailed and not actually mean too much. But, it is the nature of Theodolitics to get on with it and present them.

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Before we do anything else it is reasonable to conclude the following:

- "further research is possible"
- "there is scope for methodological refinement"
- "the question is amenable to investigation"
- "this was a glorious, inutilious, endeavour"
- "we will be able to make statements"
 - About imaginary friends
 - With confidence above 95%
 - That are grounded in Empirical Evidence

In summary these are the main things we can immediately conclude.

All of the data collection suggests that researching Imaginary Friends as if they are real is thoroughly inutilious. But that we can make statements about the Imaginary that is grounded in Empirical Evidence.

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There is a 99.9% chance that between 19.03% and 28.97% of Imaginary Friends are Left Handed; and a 95% chance that between 21.04% and 26.96% of Imaginary Friends are Left Handed.

There is a 99.9% chance that between 67.03% and 76.97% of Imaginary Friends are Right Handed; and a 95% chance that between 69.04% and 74.96% of Imaginary Friends are Right Handed.

There is a 99.9% chance that between -0.97% and 8.97% of Imaginary Friends are Ambidextrous; and a 95% chance that between 1.04% and 6.96% of Imaginary Friends are Ambidextrous.

The Ambidexterity figure at the 99.9% level suggests the data is only reliable at the 95% level of confidence.

These are the general claims we can make.

Although they are mad at the 99.9% level, It seems that the methodological flaws of the current study would limit any claims to the 95% level. This is, potentially, an indicator that there are differences between Real and Imaginary People. Just like Real and Imaginary Numbers.

So it is complex.

The negative scoring for the Ambidextrous suggests that it may be fruitful to investigate the “None Of The Above” to understand what is different about Imaginary Friends.

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**Continued Poor
Graphic Design**

**Data close to
Literature but diverges**

**Overestimating Left
Handedness**

Same Face

The Continued Poor Graphic design pleases nobody and simply upsets those whose design skills are worthwhile. Mea Culpa. Mea Culpa. Mea Maxima Culpa.

The laterality results are close to the values cited in the literature but there seems to be an overestimate of left handedness among Imaginary Friends. This may be due to the removal of error data and suggests that the analysis of the data could do with closer investigation. In particular to discern if the data is structured in some less than obvious way.

The same face is ensuring that the graphic design is poor.

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We can observe that there is a 95% chance that between

- **21.04% and 26.96% of Imaginary Friends are Left Handed**
- **69.04% and 74.96% of Imaginary Friends are Right Handed**
- **1.04% and 6.96% of Imaginary Friends are Ambidextrous**
- **Methodologically the “None Of The Above” requires investigation**
 - **There is Empirical Evidence of the Imaginary**

These are the summary of where the research is at.

In essence the research is not complete. It does not have the high rate of certainty that is expected of “serious” research, yet these conclusions can still be drawn.

The conclusion that “more research is required” seems to be grounded in the empirical evidence that it is possible to investigate Imaginary Friends as having all of the attributes of Real Friends except for corporeal existence.

In this respect it suggests fictions are grounded in fact.

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- There appears to be a difference between Real People and Imaginary Friends
 - It is not clear if the difference is an artefact of Method or Sample Size
- There appear to be fewer Left Handed Imaginary Friends than Left handed Real People
- Anecdotal evidence suggests some of the “None Of The Above” are Penguins
 - Methodology must accommodate non hand appendages
 - Data was collected on the Internet which is full of notorious liars
 - More Research Is Required
 - Graphic Design *must* improve.

Some anecdotal evidence suggests that the None of the Above classification highlights that not all Imaginary Friends are people. This would explain the lack of handedness in some responses.

Anecdotal evidence suggests that some Imaginary Friends are actually penguins or creatures with tentacles. That suggests that future research will need to accommodate the unhande as well as the handsy.

Graphic design must improve. Challenges will be issued and duels fought if not.

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The Face used throughout is an imaginary person created by a machine running a Generative Adversarial Network (2022).

Older Networks in 2019, 2022, for comparison.

Images are becoming Imaginary People. Thus rendering this Research Useful.

A danger of this research is that it could become utilious. This is an eventuality that Pataphysicians generally seek to avoid. The Hardy-Littlewood Principle: that *mathematics really ought to be useless if it is to be interesting*. The potential for application of chirality researches to artificially intelligently generated imaginary persons is a danger to be avoided. The generation of faces has improved even in the three years between 2019-2022 thus making chirality research be in danger of being utilious.

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PEER REVIEW

Like any good, respectable research there is a need for peer review if it is to be taken seriously.

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The House of Lords Science And Technology Committee Has been contacted as it is full of Peers and their review of the research would be a most reasonable pun. Pataphysics has, after all, a close relationship with the **Pun**.

Tis the House of Lords – unarguably packed to the gunnels with Peers – has been approached to peer review the proposed article that would be the outcome of this research.

Hopefully, the Lords will say it is all useless.

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FIA

For those at this point who have not lost the will to live, please
leave by the emergency exits...