

# Overview of PicTropes, a film trope dataset.

## Preliminary technical report

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### Abstract

The following report provides a descriptive analysis on the dataset PicTropes, that links 5925 films with 18270 tropes from the database DBTropes.org, which in turn collects the information from the wiki TVTropes.org. This preliminary study also includes and discusses graphical data distribution and top lists of both film-by-trope and trope-by-film relations, including further questions and proposing extensions of the dataset in order to explain the results.

## 1 Introduction

A trope can be defined as a recurring narrative device [1], whether it is technique, a motif, an archetype or a cliché, used by the authors to achieve specific effects that might vary from increasing the interest, surprising, recall familiarity, entertaining, etc, in their creative works, like books, films, comics or videogames. Some tropes are broadly adopted, academically studied and promoted, as the *Three-act Structure* formulated by Syd Field [2], the *Hero's Journey* studied by Vogler [3], the *McGuffin* popularized by Hitchcock [4] and the *Chekhov's Gun* developed by the russian writer with the eponymous name [5], but there are thousand of not-so-widely used tropes as well, discovered and catalogued everyday by professionals and enthusiastic of the storytelling; their study is organic, dynamic and extensive, for this reason our reference is a live wiki called TVTropes.org [6], that is being collecting thousand of descriptions and examples of tropes from 2014 until now. The semantic network of knowledge behind TVTropes.org is huge and complex; it massively links hierarchies of tropes to their usage in creations for digital entertainment. However, the data is only available through its web interface, that's why, in order to make it usable by the scientific community, Kiesel [7] extracted all their data to a database so-called DBTropes.org.

DBTropes.org is released as a NTriples formatted RDF file that can be downloaded directly from their official site [7]. The last release available was built in July 2016 and contains 2.1057.602 RDF statements, a large amount of data that makes it hard to load in a RDF visualization tool. For this reason, we extracted part of its information to a new dataset in JSON format, readable by most of the programming languages in a friendly manner, that is called PicTropes and contains just the films and the name of the tropes they use. This dataset can be used to build a recommendation system.

The goal of this report is to extract valuable statistical data from the dataset PicTropes that shall be used in further researches and experiments related to machine learning and narrative generation. In particular, the results will be directly applicable to different researches in the context of the PhD *Bio-inspired techniques for procedural generation of backstories in literature and open world videogames*.

Following the principles of the Open Science, the dataset and the source files of the report are released under the *Attribution-ShareAlike 3.0 Unported* License (CC BY-SA 3.0) in a public repository [8]. The values and graphs included in the current report are dynamically calculated using pweave, scipy, numpy and matplotlib in order to allow the reproducibility.

## 2 Pre-processing the data

In order to ease the data analysis we will use two data structures: a dictionary of films where the values are lists of the tropes they use and the reversed dictionary, where the keys are the tropes and the values are lists of films that they are used in. The class that handles the python code can be found in the repository [8].

## 3 Descriptive analysis of the films regarding their tropes

The dataset contains 5925 trope observations along the films. The film with more tropes is 'GuardiansOfTheGalaxy' with 515 tropes. However, the data fits a log-logistic distribution ( $location=1.945$ ,  $shape=0.054$ ,  $scale=29.292$ ) and the great majority of films have just a few dozens of tropes (43.434 on average). The features of the descriptive analysis can be found in Table 1 whereas the distribution of the films by number of tropes is represented in Figure ?? . Finally, a top-25 list is provided in Table 2 for further analysis.

Feature	Tropes in a film
Observations	5925
Minimum	1
Maximum	515
Mean	43.434
Median	29.0
Q1	16.0
Q2	29.0
Q3	52.0
Variance	2133.35
Skewness	3.332
Kurtosis	17.373

Table 1: Descriptive analysis

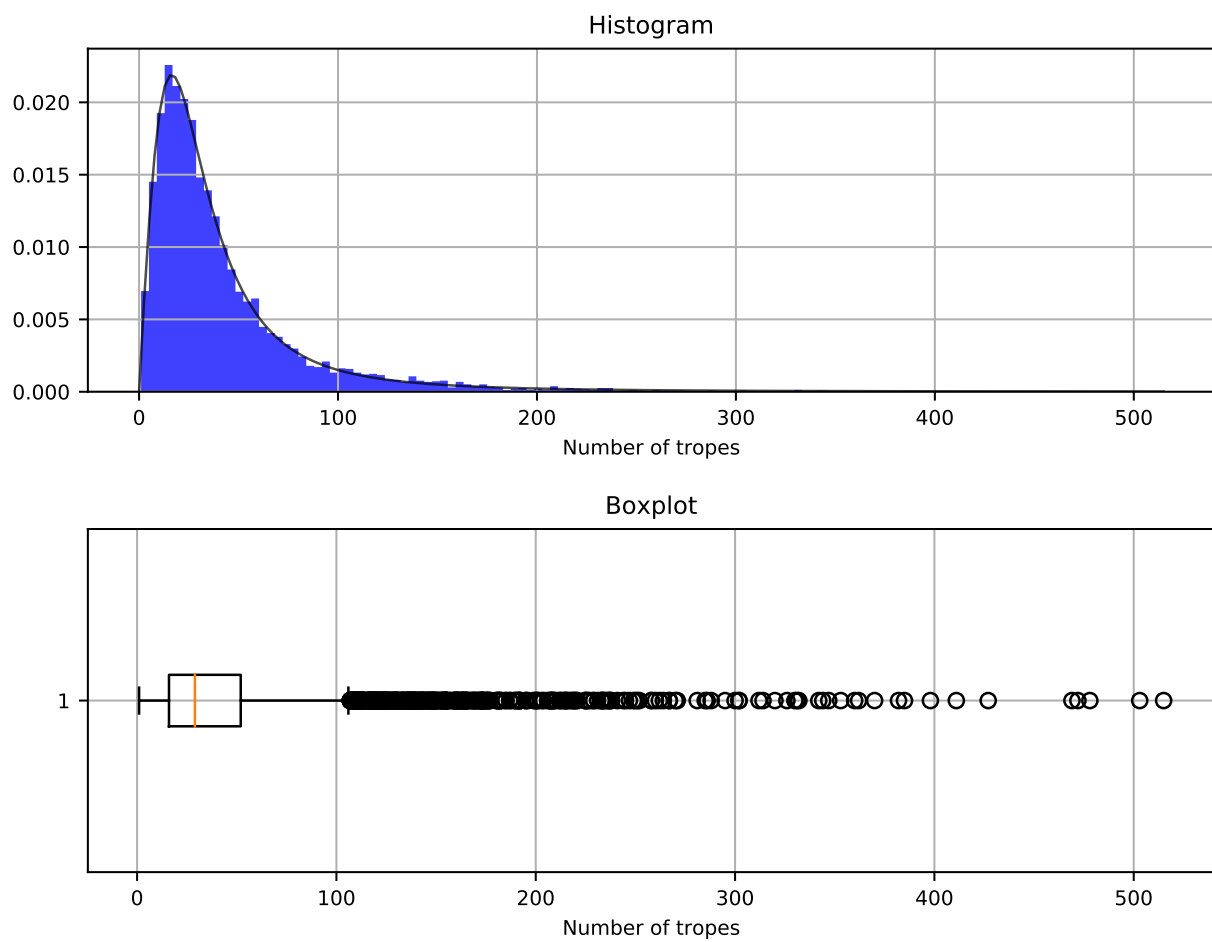


Figure 1: Distribution of films by number of tropes

<b>Film</b>	<b>N. tropes</b>	
1	GuardiansOfTheGalaxy	515
2	TheDarkKnightRises	503
3	XMenDaysOfFuturePast	478
4	CaptainAmericaTheFirstAvenger	472
5	XMenFirstClass	469
6	Thor	427
7	SherlockHolmes	411
8	TheLordOfTheRings	398
9	PacificRim	385
10	CaptainAmericaTheWinterSoldier	382
11	WhoFramedRogerRabbit	370
12	TheDarkKnight	362
13	TronLegacy	360
14	StarTrek	353
15	StarTrekIntoDarkness	347
16	Skyfall	344
17	TheGodfather	342
18	JurassicWorld	332
19	Serenity	331
20	BackToTheFuture	330
21	Inception	326
22	IronMan3	320
23	AustinPowers	314
24	GalaxyQuest	312
25	ManOfSteel	302

Table 2: Top25 films by number of tropes that they use

## 4 Descriptive analysis of the tropes

<b>Feature</b>	<b>Tropes by film</b>
Observations	18270
Minimum	1
Maximum	1502
Mean	14.086
Median	5.0
Q1	2.0
Q2	5.0
Q3	12.0
Variance	1464.794
Skewness	11.758
Kurtosis	245.951

Table 3: Descriptive analysis

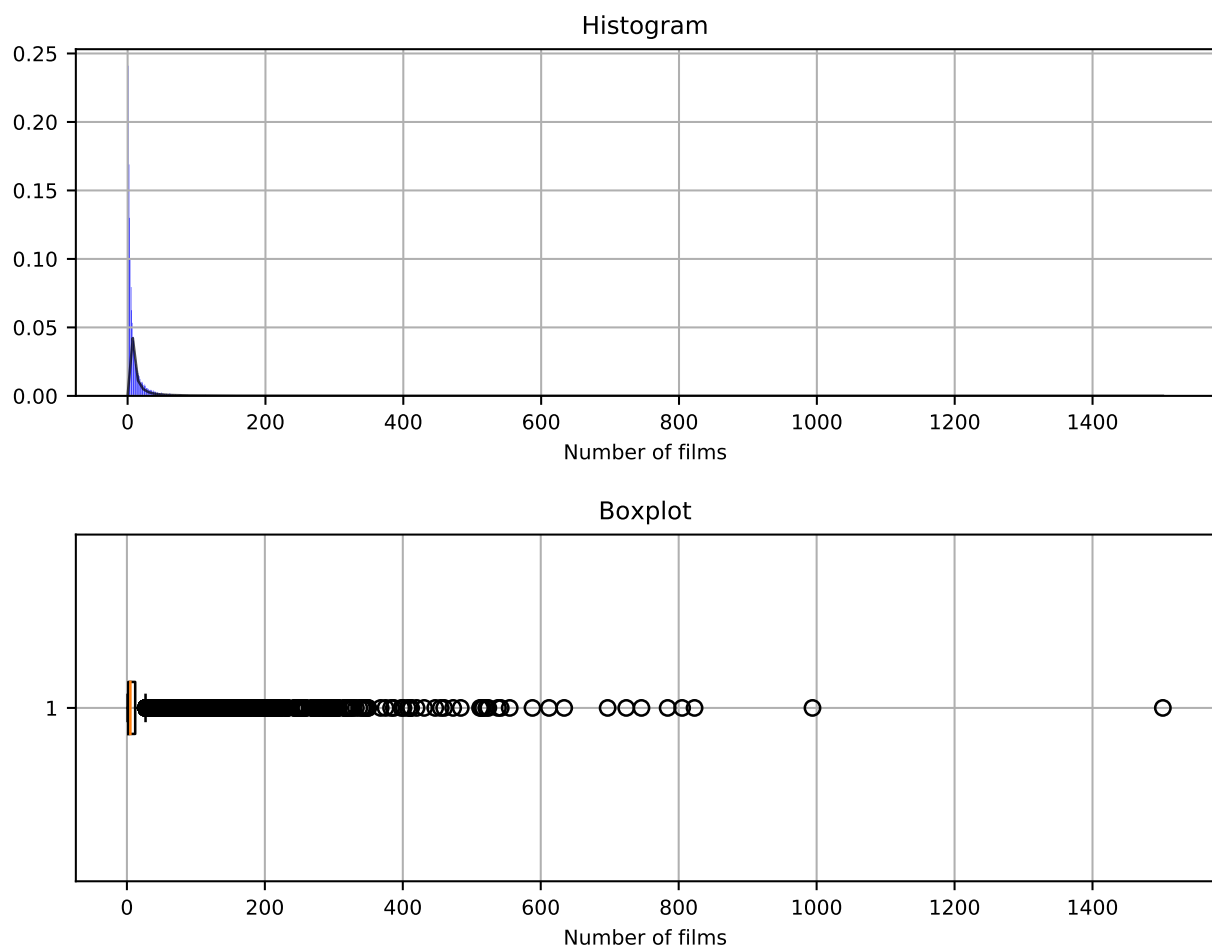


Figure 2: Distribution of tropes by number of films

Film	N. films	
1	ShoutOut	1502
2	ChekhovsGun	994
3	OhCrap	823
4	DeadpanSnarker	805
5	Jerkass	784
6	Foreshadowing	746
7	LargeHam	724
8	BittersweetEnding	697
9	TitleDrop	634
10	BigBad	612
11	MeaningfulName	588
12	BerserkButton	555
13	TheCameo	542
14	WhatHappenedToTheMouse	538
15	RunningGag	524
16	TooDumbToLive	521
17	DownerEnding	516
18	FanService	516
19	KarmaHoudini	514
20	GroinAttack	512
21	BrickJoke	484
22	BookEnds	473
23	MoodWhiplash	460
24	KickTheDog	455
25	PrecisionFStrike	447

Table 4: Top25 tropes by number of films that they appear in

## 5 Discussion

TODO por qué TODO tipo de distribución TODO dudas

## 6 Conclusions

### References

- [1] C. Baldick, *The Oxford dictionary of literary terms*. OUP Oxford, 2015.
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- [5] P. M. bitsilli, *Chekhov's art, a stylistic analysis*. Ardis, 1983.
- [6] "Tv tropes." (visited on 2018-07-11).
- [7] M. Kiesel, "Dbtropes – skipforward." (visited on 2018-07-11).
- [8] R. H. Garcia Ortega, "tropes open data." (visited on 2018-07-11).