ARTigo

QUALITATIVE ANALYSIS OF THE ARTIGO GAMING ECOSYSTEM

Bachelorarbeit

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ARTigo

Summary

1. Motivation & Aim of the Thesis
2. Tag Quality
3. Online Survey
4. Limitations of the Survey
5. New Game Proposal
6. Conclusion

ARTigo

1. Motivation & Aim of the Thesis

Aim of ARTigo

collecting data needed to build a semantic artwork search engine

- annotations for a large number of artworks
- information on each artwork should be as broad as possible

→ **Human Computation**[1] **as solution**

1 von Ahn, (2009).

1. Motivation & Aim of the Thesis

Problem

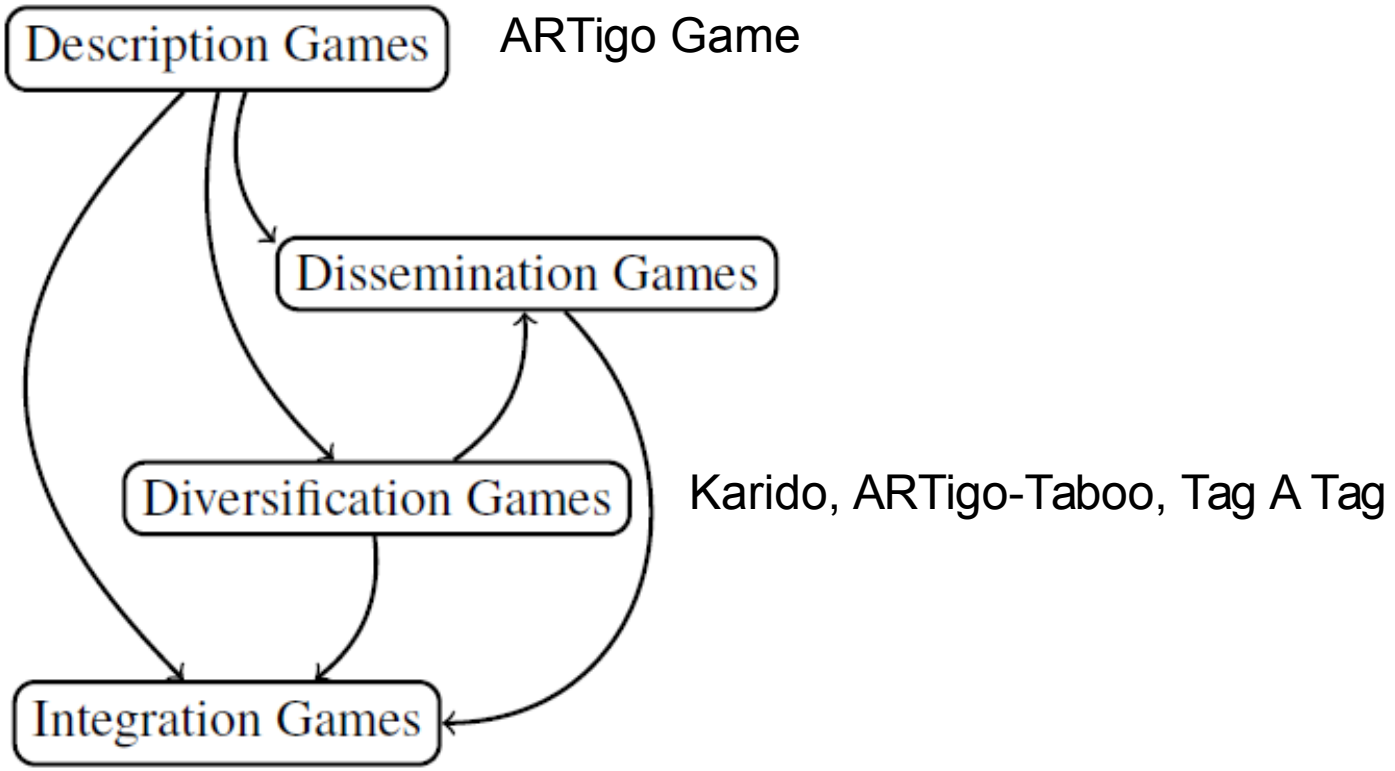
Games like the ARTigo Game produce mostly general surface tags[2]

→ different games that produce tags of different semantic depth

2 Weber et al., (2008)

1. Motivation & Aim of the Thesis

The Gaming Ecosystem



Tag flow in the ARTigo gaming ecosystem. Quelle: Wieser et al, (2013).

1. Motivation & Aim of the Thesis

Aim of the Thesis

Prove or disprove the effectiveness of the ARTigo Gaming Ecosystem

- analyse and compare tags produced by different games
- analyse the quality of tag sets produced by the ecosystem

2. Tag Quality

Tag Correctness

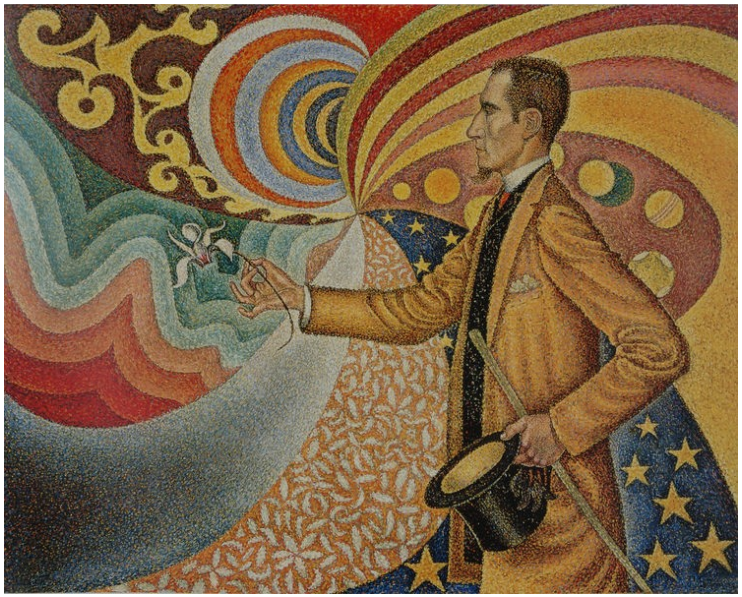
- Correct spelling
- Appropriate for the artwork

→ Effect of incorrect tags on the ecosystem is minimized by the validation mechanism

2. Tag Quality

Four Dimensions of Semantic Value

- Relevance
- Specificity
- Semantic Depth
- Level of Detail

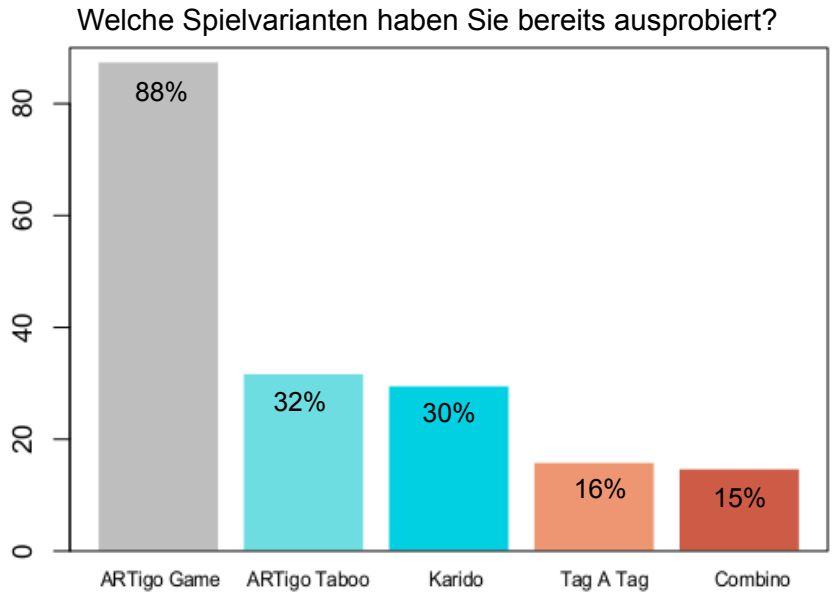


Paul Signac, Portrait de Félix Fénéon. Opus 217, 1890-1891

3. Online Survey - Sample

159 participants answered the complete questionnaire

- 55% have played a game on the ARTigo platform
- 48% are highly interested in fine arts
- 45% have a profession related to art, art history or art education



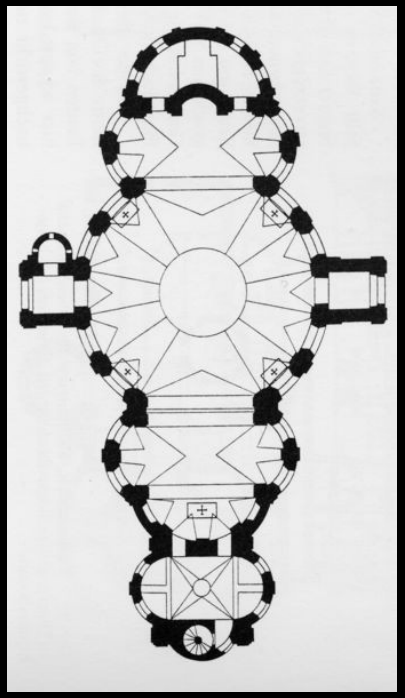
3. Online Survey Part 1

Do people tag differently if they are simply asked to describe an artwork with tags?

Enter three terms that describe the displayed image as good as possible

Artwork 1

Artwork 2



Artwork 3

Artwork 4

Artwork 1: Albert-Ernest Carrier-Belleuse, Bildnis einer jungen Frau, 1860/1868
Artwork 2: Adolph Menzel, Chodowiecki auf der Jannowitzbrücke, 1859
Artwork 3: Constantin Pader, Maria Birnbaum (Grundriss), 1661-1668
Artwork 4: Kasimir Malewitsch, Der Schleifer, 1912/1913

3. Online Survey Part 1

Number of tags

Artwork	Taggings	Unique Tags	Combined Tags
1	227	41%	4%
2	213	49%	7%
3	214	33%	1%
4	227	45%	6%

Three most frequent tags per artwork

Artwork 1		Artwork 2		Artwork 3		Artwork 4	
Tag	**Quantity**	**Tag**	**Quantity**	**Tag**	**Quantity**	**Tag**	**Quantity**
Büste	43	Mann	34	Grundriss	55	abstrakt	31
Frau	30	Brücke	8	Kirche	42	Kubismus	26
Ton	12	Porträt	7	Architektur	13	geometrisch	7

3. Online Survey Part 1

Limitation:

Participants of the survey were restricted to three tags

3. Online Survey Part 2

Do tags produced by Karido help telling artworks apart?

*

Welches der vier Bilder gehört zu dieser Begriffssammlung?

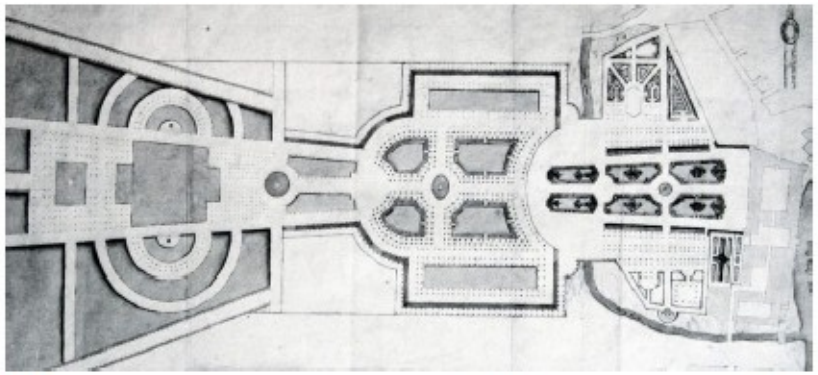
Spaziergang, Krückstock, Jacket, sitzend, Park, Bank

Ich weiß es nicht

Wenn Sie ein Bild genauer betrachten möchten, klicken Sie es einfach an.

Von links nach rechts:
Konstantin Alexejewitsch Korowin, Porträt von Fjodor Schaljapin, 1911
Lovis Corinth, Porträt des Pianisten Conrad Ansorge,1903
Francisco José Goya Lucientes, Gaspar Melchor de Jovellanos, 1798
Giovanni Fattori, Giovannis Frau im Garten, 1870/1875

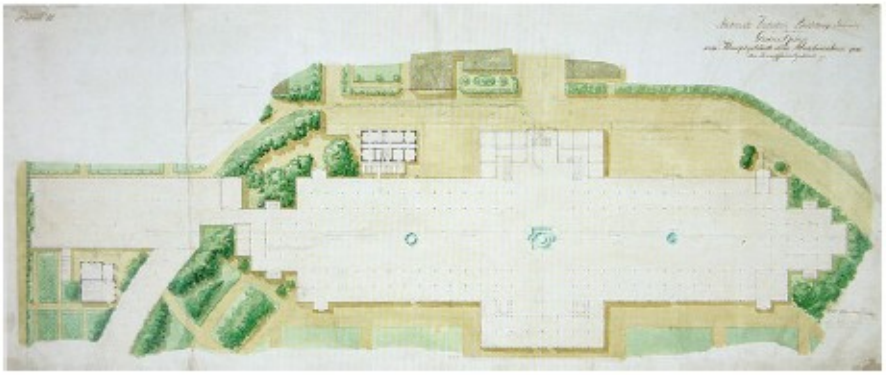
3. Online Survey Part 2



(a) Anonym, Plan des Palazzo Ducale di Colorno mit Garten, 1760

(b) Carl Joseph von Effner, Plan der Parkanlage von Herrenchiemsee, 1876

(c) Anonym, Faubourg Saint-Honorè, 1734-1739



(d) August von Voit, Glaspalast München, Grundriss, 1854

3. Online Survey Part 2

Limitation:

Tags were used from the old version of the ARTigo Game

3. Online Survey Part 3

Do tags produced by Tag A Tag increase the semantic value?

Welcher Begriff bzw. welche Begriffskombination beschreibt dieses Bild am besten?

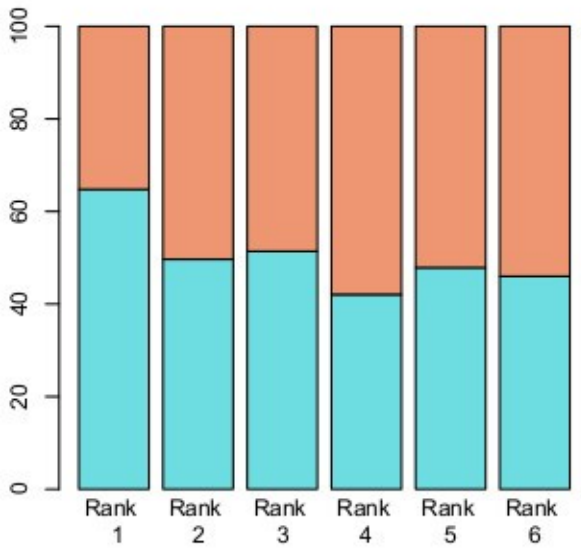
Ordnen Sie die Elemente in die rechte Liste ein (höchste Bewertung oben). Die Elemente können mit der Maus verschoben werden. Doppelklick verschiebt ein Element in die andere Liste.
Bitte wählen Sie mindestens eine Antwort.

Ihre Auswahl	Ihre Rangfolge
Fenster + Rahmen	
Rühren + Kind	
Gemälde	
Brille	
Frau + Kleid	
Kragen	

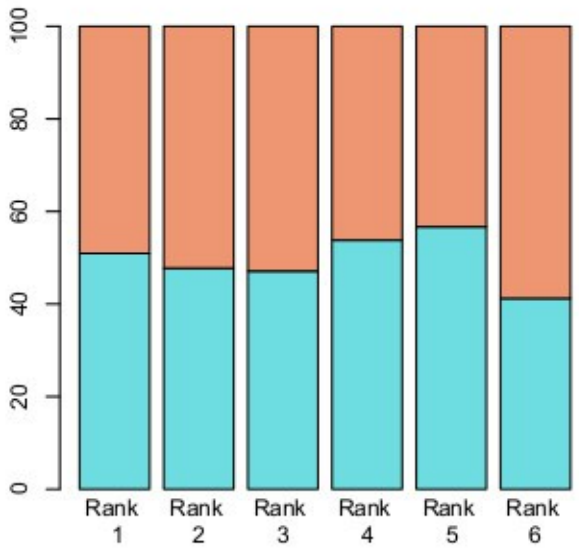
Godfried Schalcken, Der Rommelpotspieler, 1665-1670

3. Online Survey Part 3

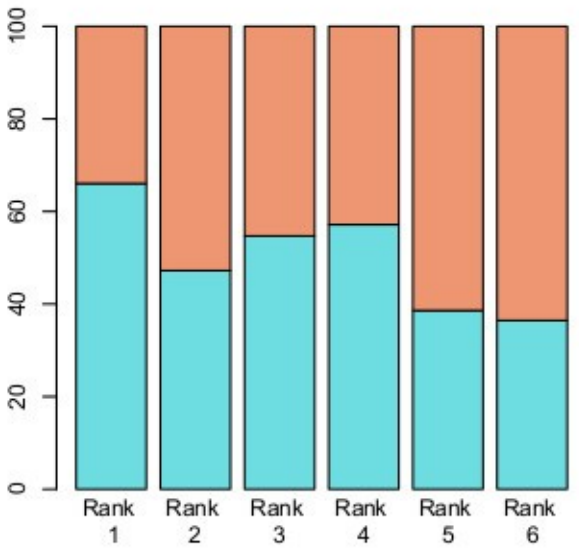
Artwork 1



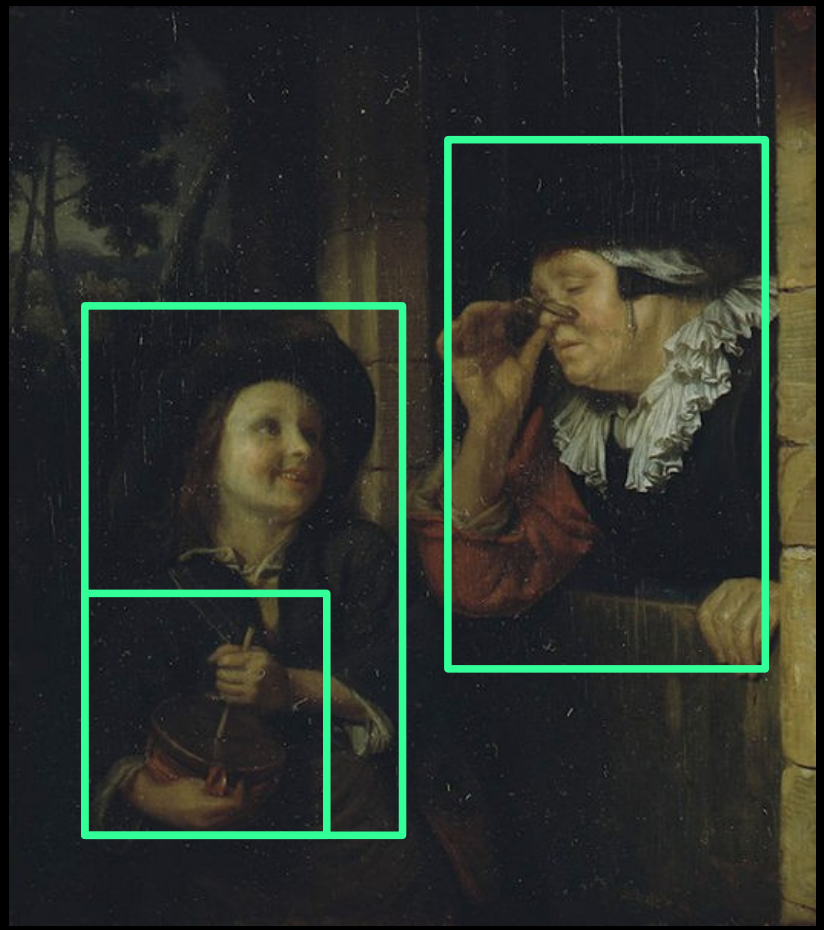
Artwork 2



Artwork 3



All figures in percent



3. Online Survey Part 3

Limitation:

Tags produced by Tag A Tag have not been evaluated as single tags

3. Online Survey Part 4

Are tag sets produced by more than one game more meaningful than tag sets produced by a single game?

Welche der folgenden Begriffskombinationen beschreibt das Bild am besten?

Bitte wählen Sie eine der folgenden Antworten:

- Schwarz, Bart, Mann, Porträt, Hut, Rot
- Rot, Taler, Band, Ärmel, sitzen, Orden
- Bauer, Neuzeit, Mann, Géricault, Bart, Medallion
- Bauer, Géricault, Opa, Medallion, Augapfel, Neuzeit
- Keine Antwort

Thèodore Gèricault, Le monomane du commandement militaire, 1819-1823

3. Online Survey – Part 4

Artwork	ARTigo (most fre	and Taboo	All games
1	4.40%		20.13%
2	30.82%		**39.62%**
3	**46.54%**		12.58%

3. Online Survey Part 4

Limitation:

- Tags produced by Tag A Tag and Combino are not included
- Why did participants choose a certain set?

3. Online Survey Part 5

How do tags produced by diversification games differ from tags produced by the ARTigo Game?

Bitte wählen Sie aus, welche Aussagen für Sie auf die folgenden Begriffe zutreffen.

	... ist wichtig für das Bild					... ist auf den ersten Blick zu sehen				
	Ich stimme voll zu 1	2	3	4	Ich stimme nicht zu 5	Ich stimme voll zu 1	2	3	4	Ich stimme nicht zu 5
Chaotisch	○	○	○	○	○	○	○	○	○	○
Geometrische Formen	○	○	○	○	○	○	○	○	○	○
Moderne Kunst	○	○	○	○	○	○	○	○	○	○
Mosaik	○	○	○	○	○	○	○	○	○	○
Kubismus	○	○	○	○	○	○	○	○	○	○
Rad	○	○	○	○	○	○	○	○	○	○
Mann	○	○	○	○	○	○	○	○	○	○
Grau	○	○	○	○	○	○	○	○	○	○

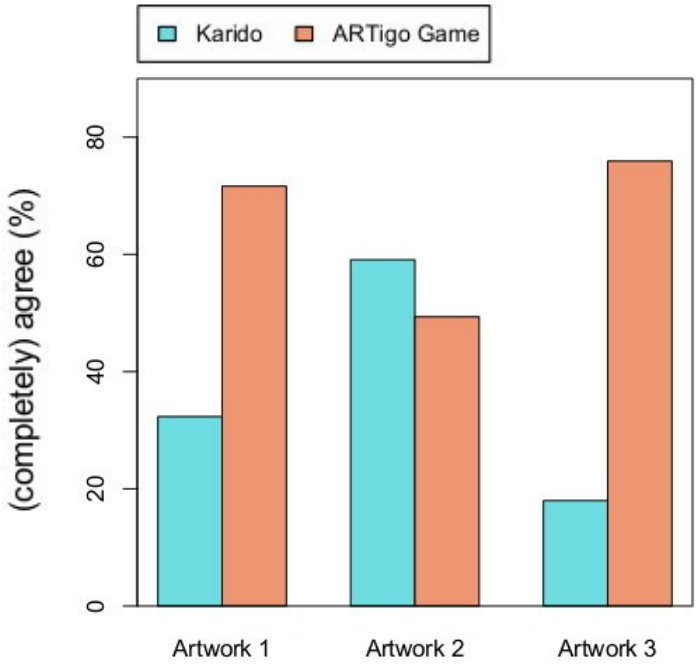
*

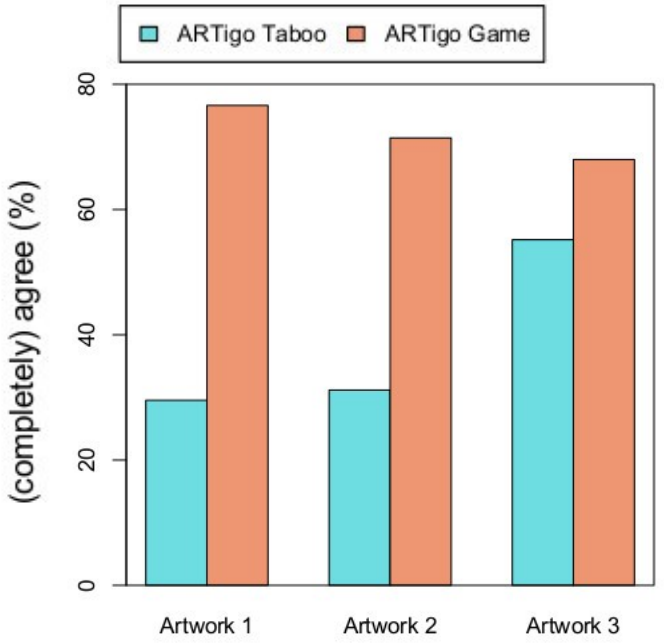
	... beschreibt das Bild in seiner Gesamtheit					... ist ein sehr allgemeiner Begriff (z.B. Person, Tier)				
	Ich stimme voll zu 1	2	3	4	Ich stimme nicht zu 5	Ich stimme voll zu 1	2	3	4	Ich stimme nicht zu 5
Chaotisch	○	○	○	○	○	○	○	○	○	○
Geometrische Formen	○	○	○	○	○	○	○	○	○	○
Moderne Kunst	○	○	○	○	○	○	○	○	○	○
Mosaik	○	○	○	○	○	○	○	○	○	○
Kubismus	○	○	○	○	○	○	○	○	○	○
Rad	○	○	○	○	○	○	○	○	○	○
Mann	○	○	○	○	○	○	○	○	○	○
Grau	○	○	○	○	○	○	○	○	○	○

Kasimir Malewitsch, Der Schleifer, 1912/1913

3. Online Survey Part 5

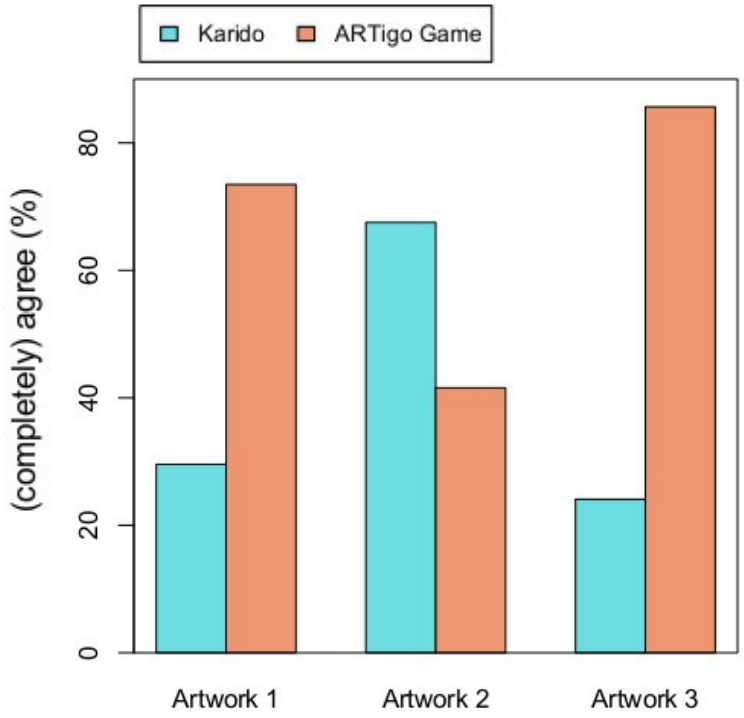
Tag is important...

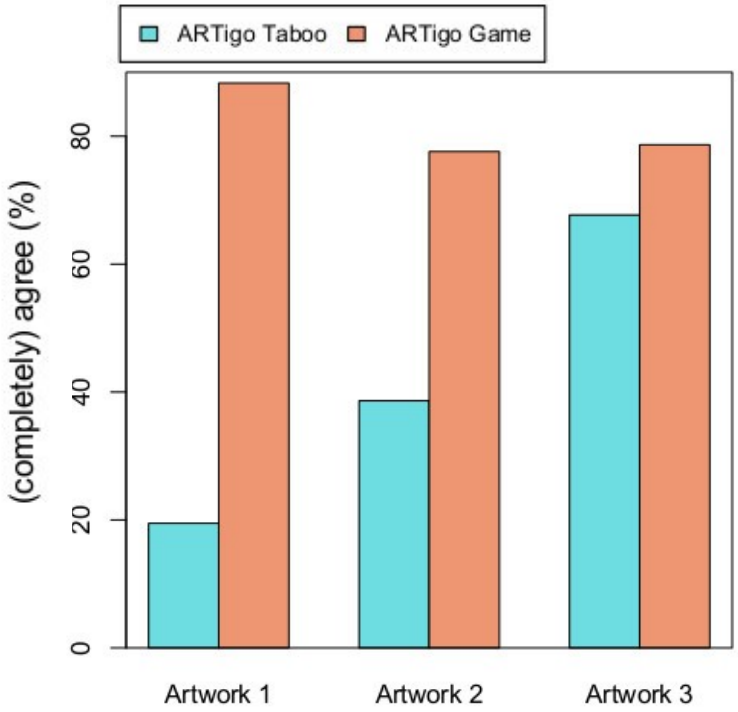




3. Online Survey Part 5

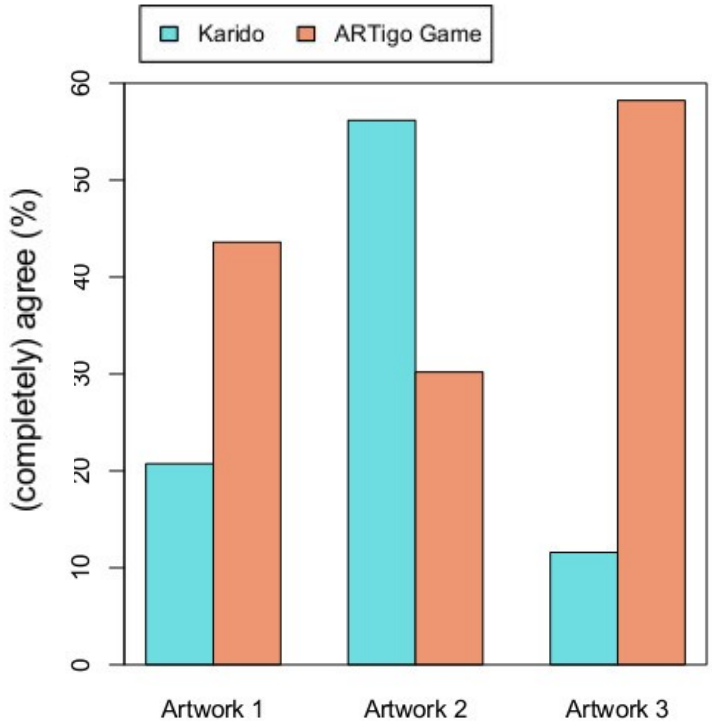
Tag is visible at first sight...

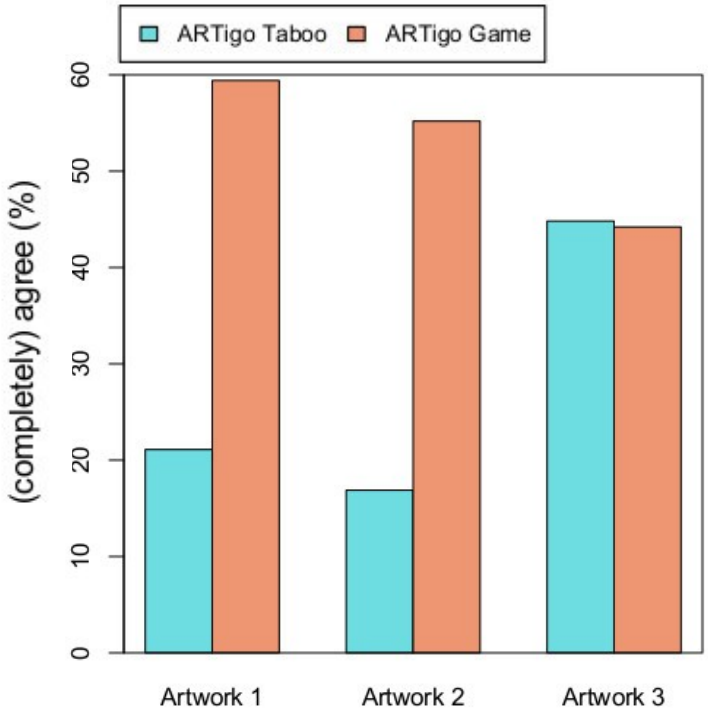




3. Online Survey Part 5

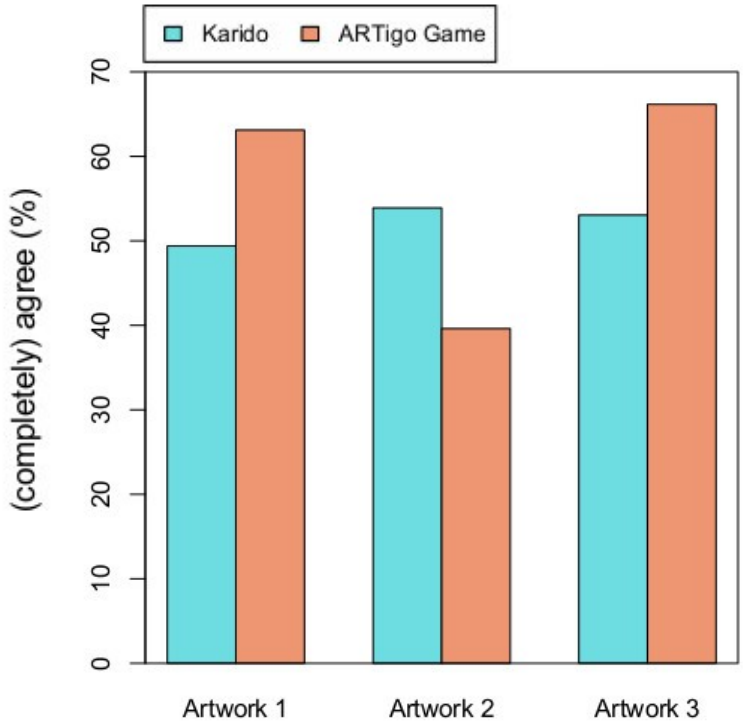
Tag describes the artwork as a whole...

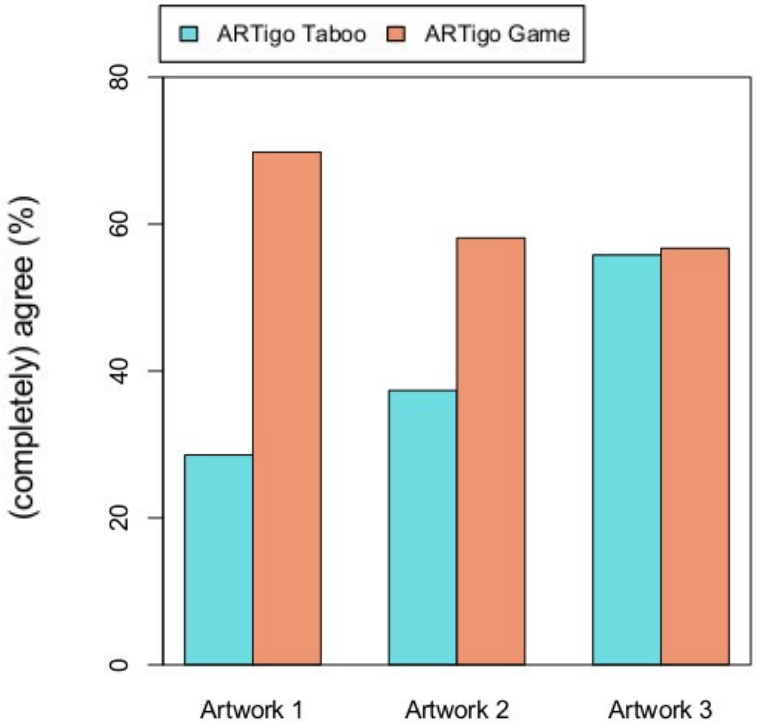




3. Online Survey Part 5

Tag is generic...





3. Online Survey Part 5

Limitation:

For the ARTigo Game only the most frequent tags were evaluated

4. General Limitations

- Only a small sample of artworks / tags could be evaluated
- Amount of tags per artwork added by the ARTigo Game is much higher than the amount added by every other game
- Diversification games work like description games if not enough input is available

5. New Game

Tag A Part

Objective: tag parts of an image in detail but to simultaneously reveal the relationships between different tags

- Parts can be predefined or chosen by the 'describer'
- Describer has to describe the part to the 'guesser'
- More points the more hidden the part is

Refinement and further ideas Tag An Aspect 1&2 and Unveil 1&2 in Bry et al., 2015.

6. Conclusion

- Different games of the ecosystem produce tags with different semantic characteristics
- Diversification games ARTigo Taboo and Karido contribute detailed and specific tags to the ecosystem
- Integration game Tag A Tag enhances the value of tags by specifying them or supplementing them with further information
- The Gaming Ecosystem performs better than its parts

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