

# Pragmatic factors in image description

## The case of negations

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### Salient Absence



A man **without** a shirt playing tennis.

### Negation of action/behavior



A kid eating out of a plate **without** using his hands.

### Negation of property



A man wearing a hard hat stands in front of buildings **not** yet finished being built.

### Negation of attitude



A man sitting on a panel **not** enjoying the speech.

## Outline

- **Negations** are words communicating that something is **not** the case.
- Why describe an image by saying what's not there?  $\Rightarrow$  Expectations.
- What can negations tell us about the image description process?
- We categorized negations in Flickr30K.

### General statistics

- Negation use is **subjective**; usually just 1/5 descriptions with a negation.

Dataset	1	2	3	4	5
Flickr30K	659	85	16	1	3
MS COCO	2406	277	78	30	5

Table 1: Number of descriptions with negations

- Used in **0.56%** of Flickr30K descriptions.
- Our selection of negations could be extended to other **implicit negations** and **affixal negations**.

no	371	nothing	16	neither	2
not	198	lack	9	sans	1
without	141	fail	9	none	1
miss	69	never	5	nobody	1
n't	68	nowhere	3		

Table 2: Frequency counts for each negation term.

## Results

- Our corpus highlights **richness** of the data.
- Large amount of **reasoning** involved!
- **One out of many** reasoning-heavy phenomena.

Category	Count
Salient absence	488
Negation of action/behavior	90
Quotes and idioms	71
Not a description/Meta	40
Negation of attitude	36
False positive	31
Outside the frame	26
Negation of property	25
(Preventing) future events	21
Other	66

Table 3: Frequency count of each category.

- GitHub: [evanmiltenburg/annotating-negations](https://github.com/evanmiltenburg/annotating-negations)

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### Outside the frame



A woman is taking a picture of something **not** in the shot with her phone.

### (Preventing) future events



A man is riding a bucking horse trying to hold on and **not** get thrown off.

### Quotes and idioms



Strolling down the path to **nowhere**.

### Other



The little boy [...] is smiling under the blue umbrella even though it is **not** raining.