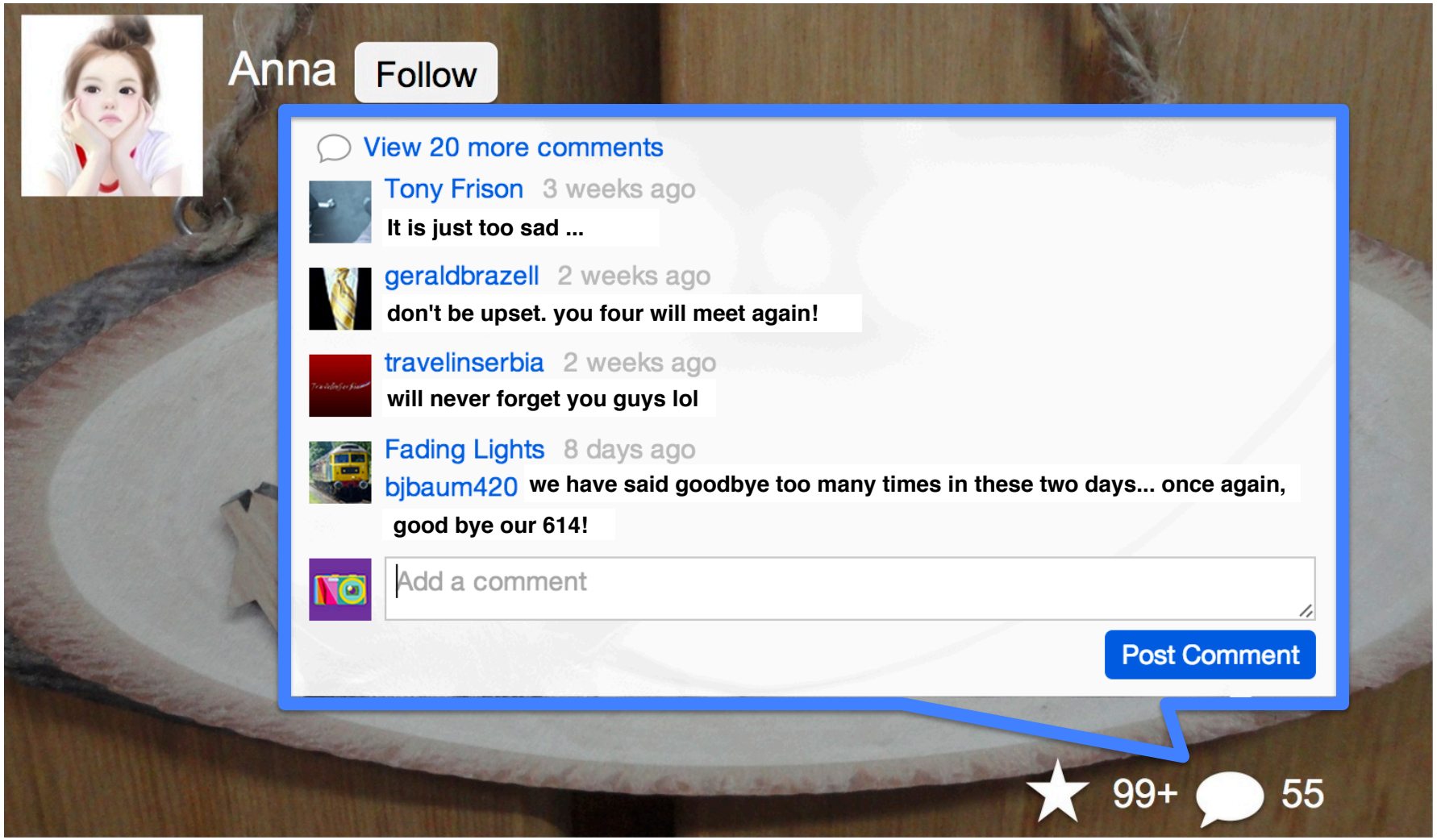
How Do Your Friends on Social Media **Disclose** Your **Emotions**?

Yang Yang, Jia Jia, Shumei Zhang, Boya Wu,
Qicong Chen, Juanzi Li, Chunxiao Xing, and Jie Tang
Tsinghua University

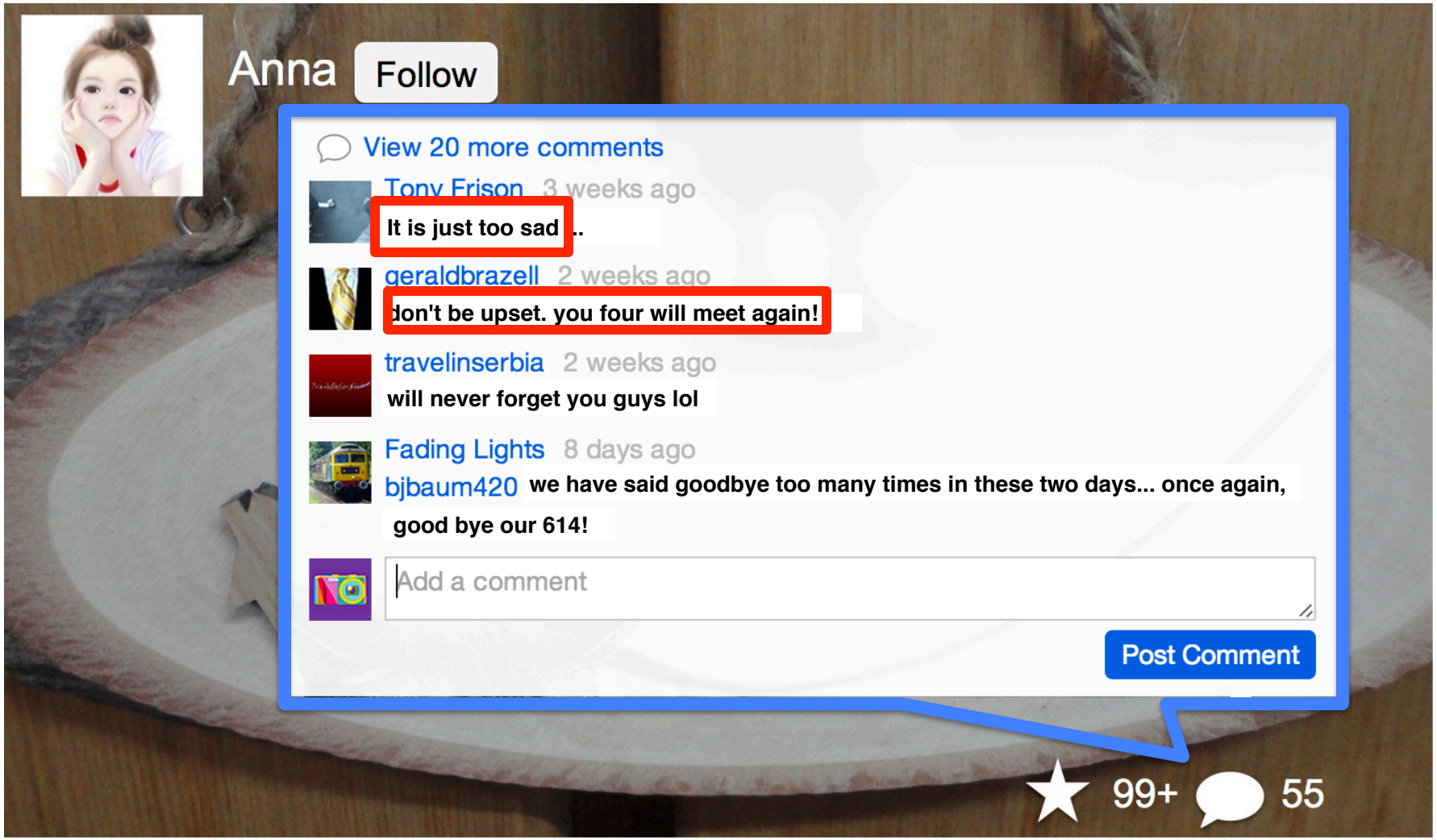
Was Anna Happy When She Published This Photo On Flickr?

Was Anna Happy When She Published This Photo On Flickr?

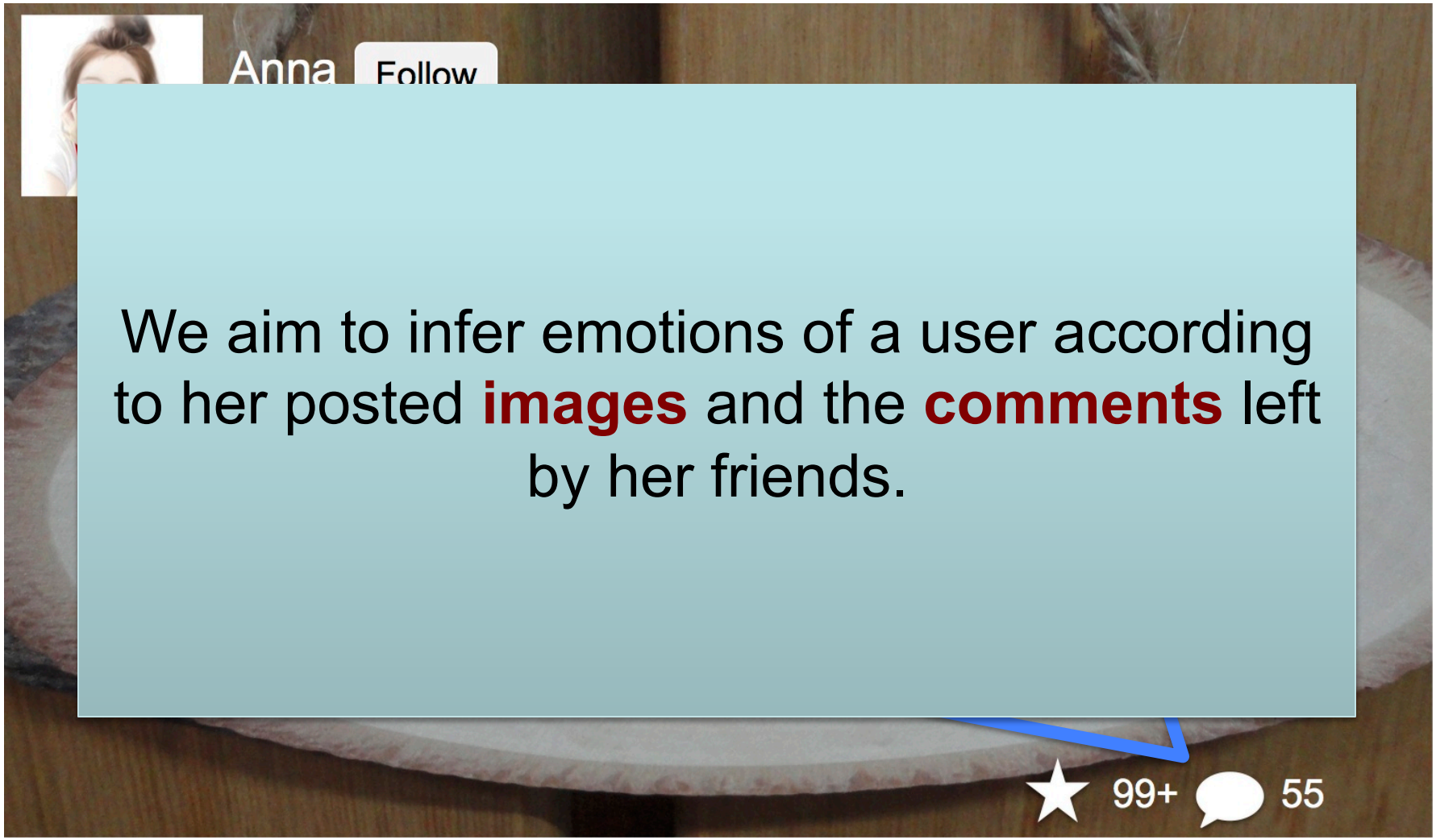
Was Anna Happy When She Published This Photo On Flickr?



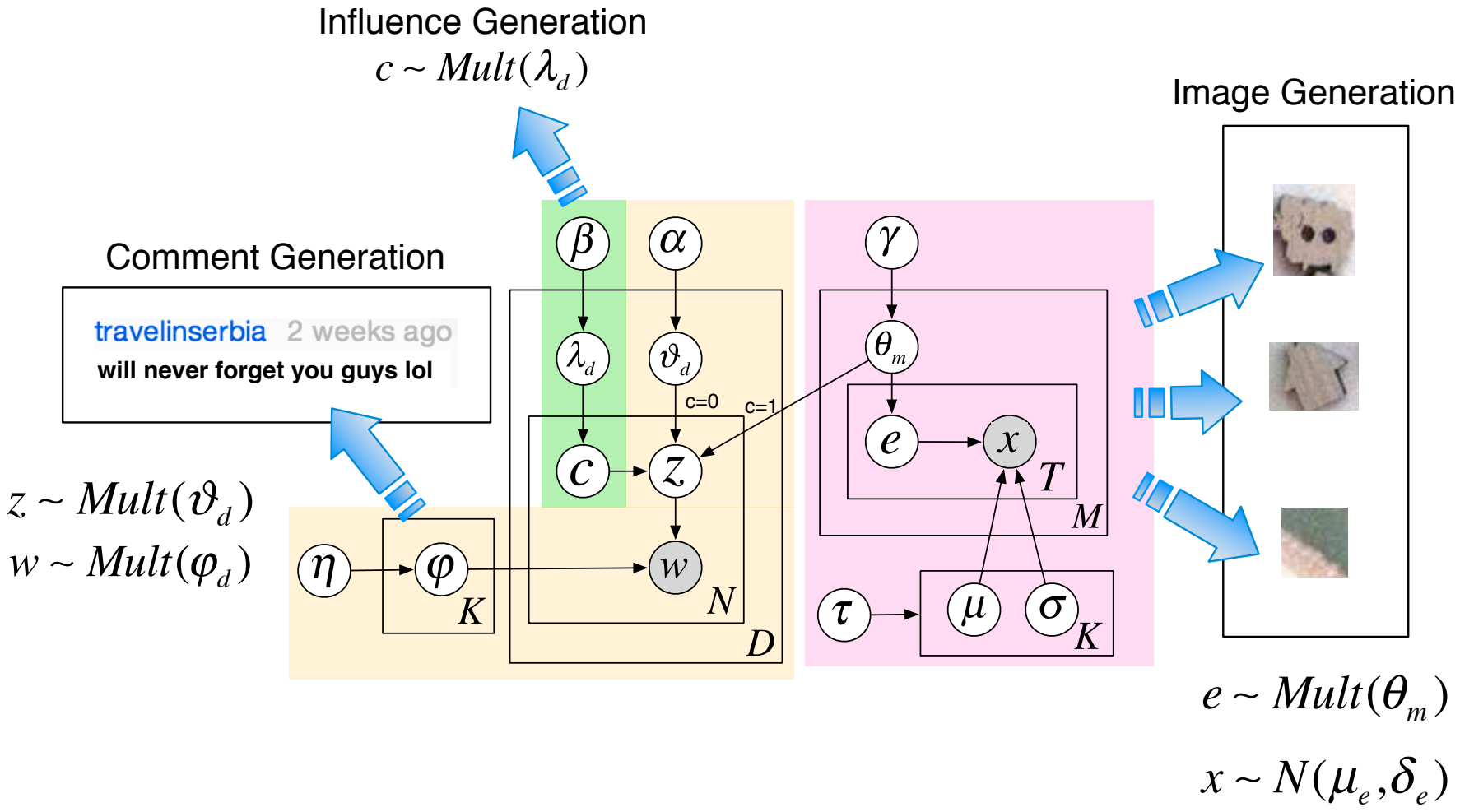
Was Anna Happy When She Published This Photo On Flickr?



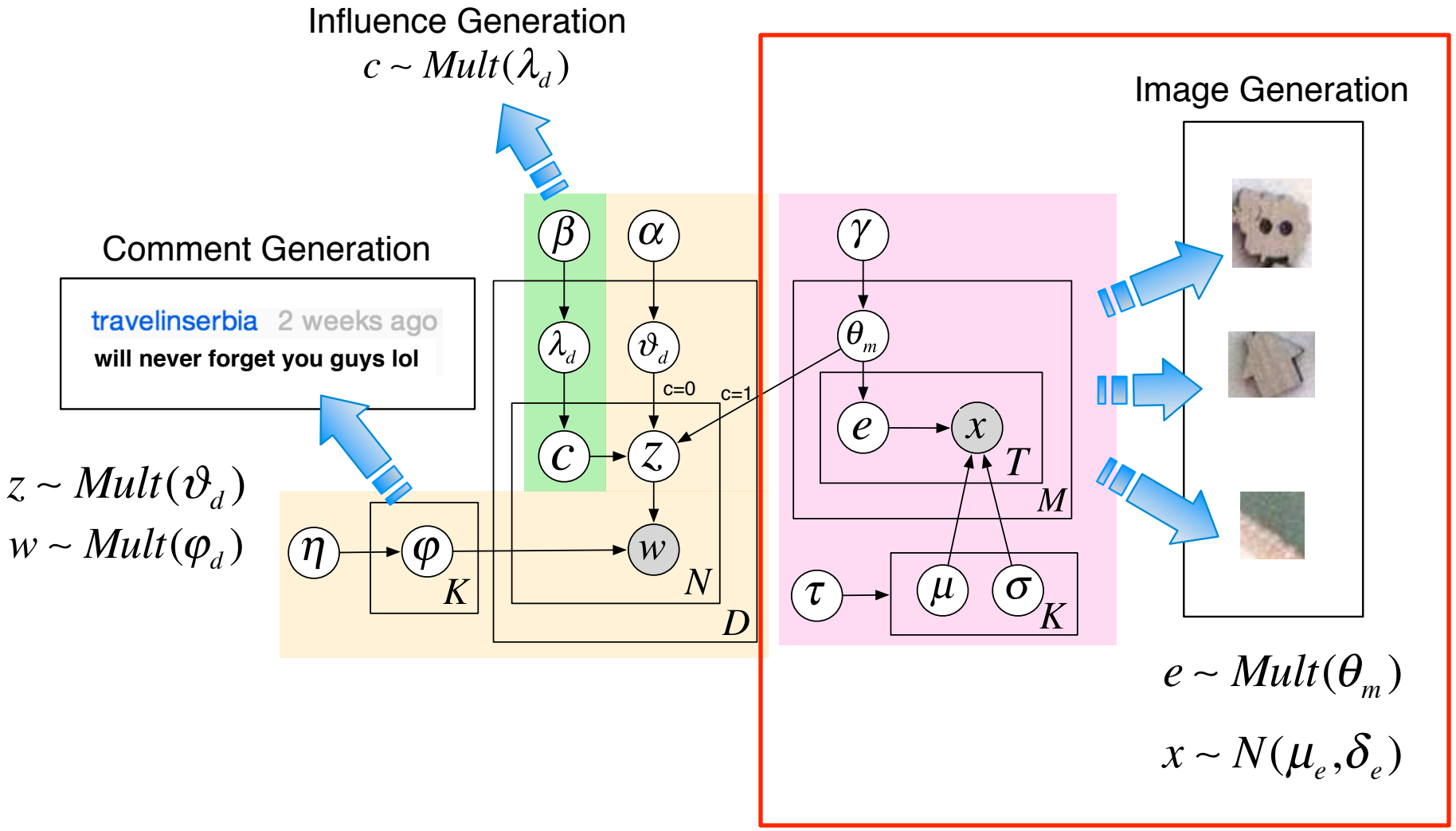
Was Anna Happy When She Published This Photo On Flickr?



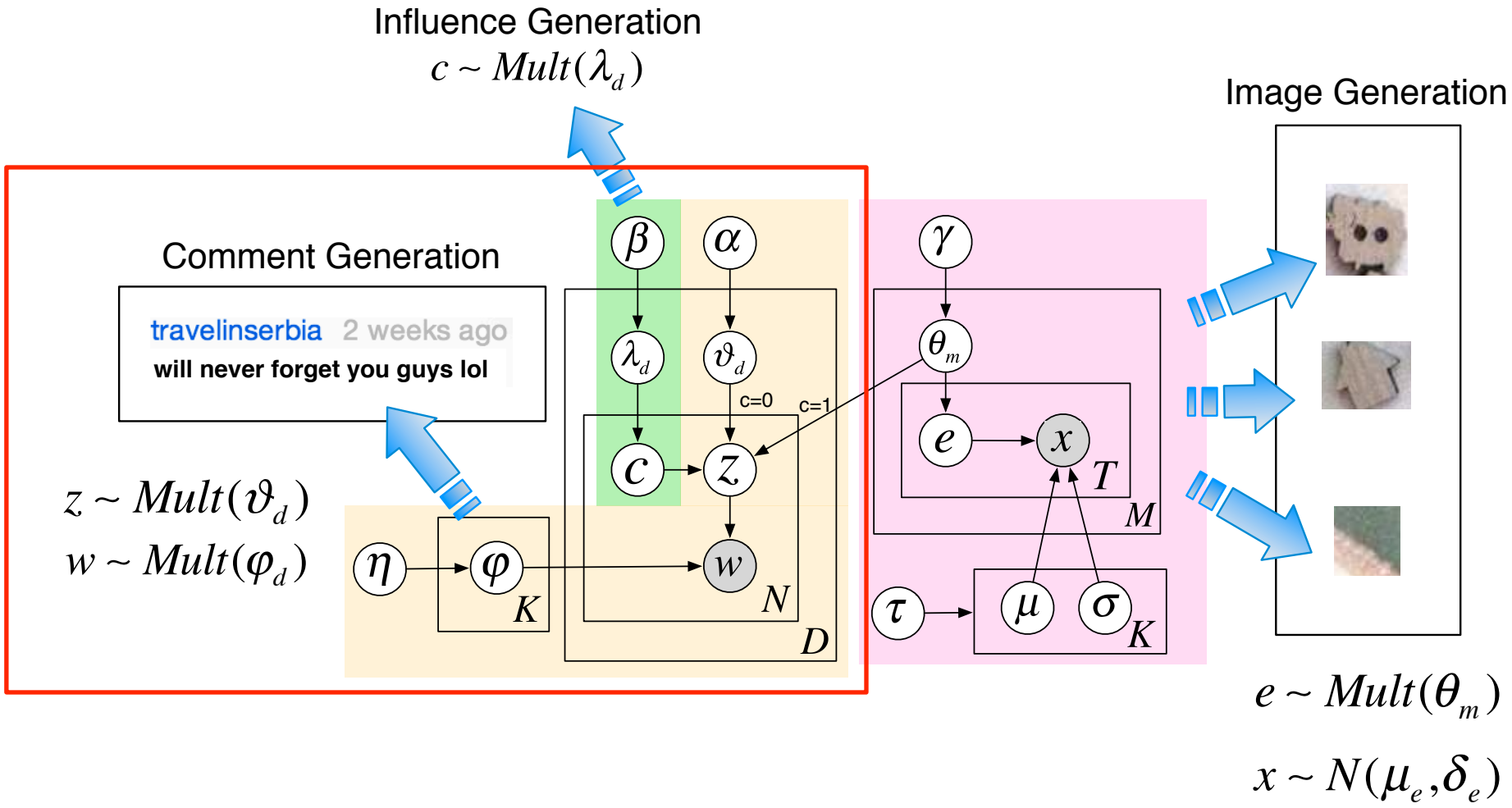
Emotion Learning Method



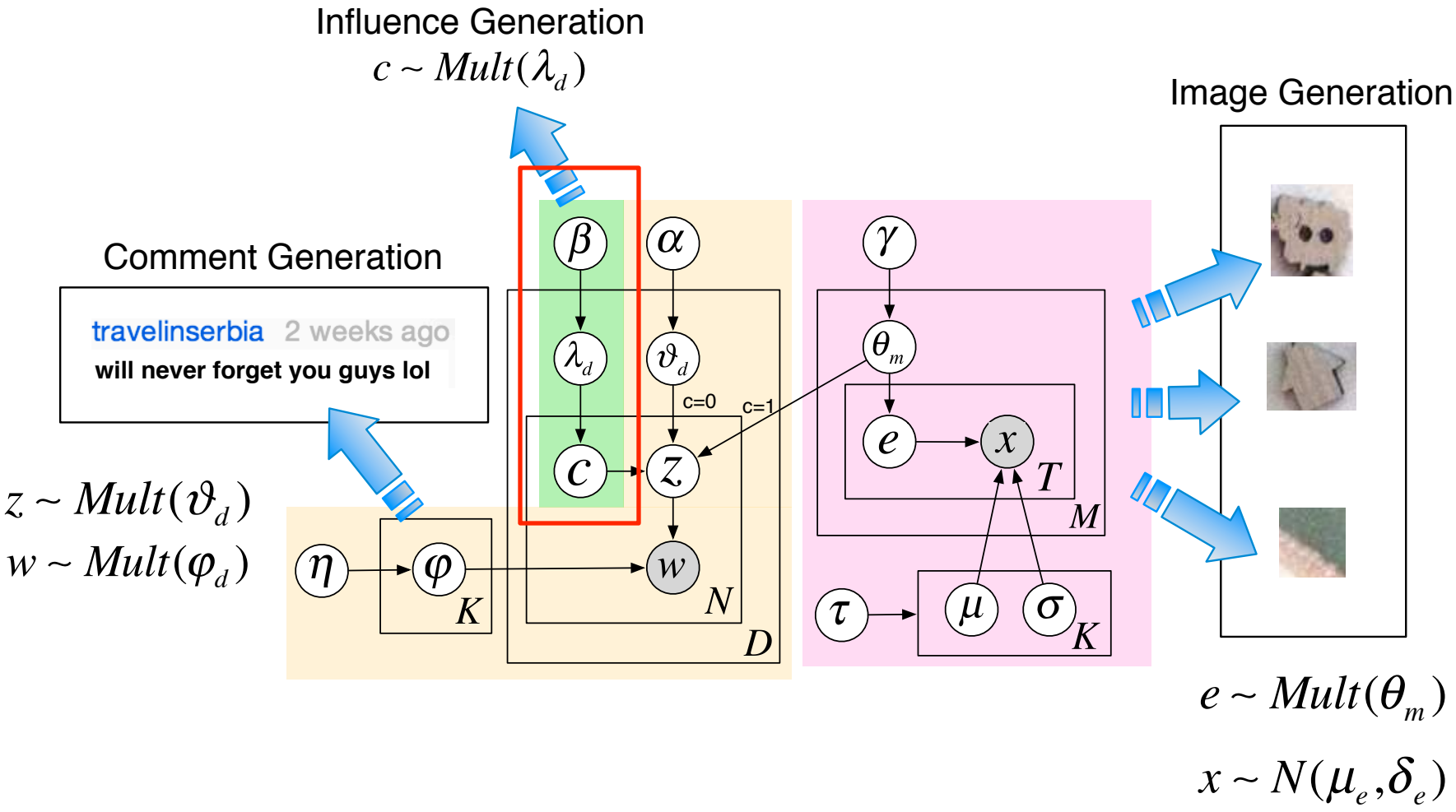
Emotion Learning Method



Emotion Learning Method



Emotion Learning Method



Emotion Inference

Averagely **+37.4%** in terms of F1

Table 2: Performance of emotion inference.

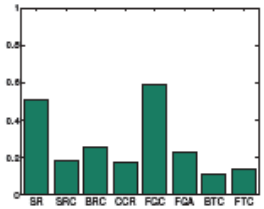
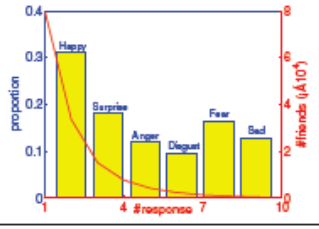
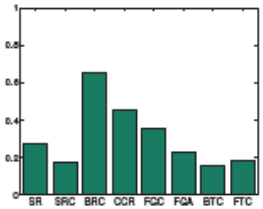
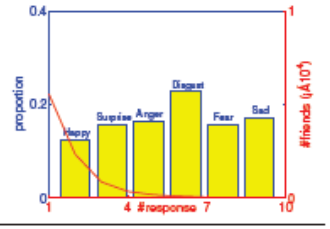
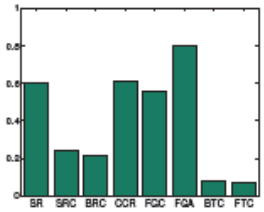
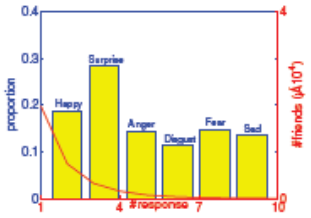
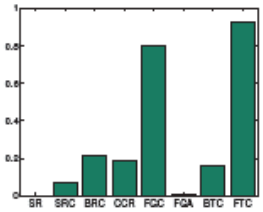
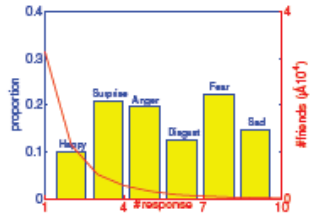
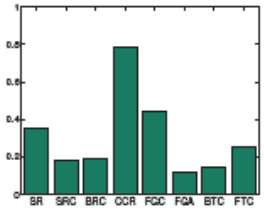
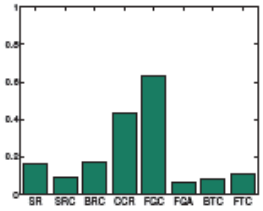
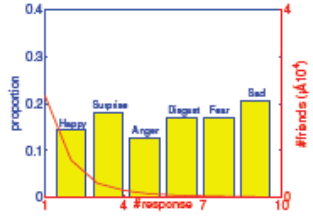
Emotion	Method	Precision	Recall	F1-score	Emotion	Method	Precision	Recall	F1-score
Happiness	SVM	0.242	0.279	0.259	Disgust	SVM	0.192	0.236	0.212
	PFG	0.337	0.312	0.324		PFG	0.309	0.374	0.339
	LDA+SVM	0.333	**0.727**	**0.457**		LDA+SVM	0.223	0.223	0.223
	EL+SVM	**0.367**	0.410	0.388		EL+SVM	**0.331**	**0.432**	**0.374**
Surprise	SVM	0.197	0.037	0.063	Fear	SVM	0.204	0.264	0.230
	PFG	0.349	0.340	0.345		PFG	0.301	**0.408**	0.347
	LDA+SVM	0.218	0.048	0.078		LDA+SVM	0.211	0.225	0.217
	EL+SVM	**0.425**	**0.516**	**0.466**		EL+SVM	**0.371**	0.343	**0.356**
Anger	SVM	0.188	0.105	0.135	Sadness	SVM	0.225	0.365	0.278
	PFG	0.191	0.142	0.163		PFG	0.357	0.286	0.317
	LDA+SVM	0.222	0.109	0.146		LDA+SVM	0.257	0.278	0.267
	EL+SVM	**0.390**	**0.370**	**0.380**		EL+SVM	**0.561**	**0.617**	**0.588**

SVM: regards the visual features of images as inputs and uses a SVM as a classifier.

PFG: considers both color features and social correlations among images.

LDA+SVM: first uses LDA to extract latent topics from comments, then uses visual features, topic distributions, and social ties as features to train a SVM.

Image Interpretations

Category	Visual Features	Social Response	Category	Visual Features	Social Response
Happiness			Disgust		
Surprise			Fear		
Anger			Sadness		

- Our model demonstrates how visual features distribute over different emotions. (e.g., images representing Happiness have high saturation)
- Positive emotions attract more response (***+4.4*** times) and more easily to influence others compared with negative emotions.

- *We study the problem of inferring emotions of images from a new perspective by bringing in comment information.*

- Thanks!
- Code & Data:
  - *http://aminer.org/emotion*