

Crumpling Sound Synthesis – User Study Supplemental Material

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As described in the main text, we evaluate 3 conditions: recorded sounds (R), sounds synthesized with our approach (S), and sounds synthesized without our contributions (D). The first study (A) assesses how recognizable the sounds are. The second study (B) seeks to provide further insight by asking for a subjective rating for each sound.

We have five examples:

- Alum. – Aluminium Foil
- Candy – Candy Wrapper
- Bag – Plastic Bag
- Bottle – Plastic Bottle
- Soda – Soda Can

Recognizability. For the first user study, we show the boxplot of the results in the main text. The mean accuracy rates for R, S and D are respectively 0.81, 0.75, and 0.50. In addition, here we list the data collected for each object in Table 1-3, for conditions R, S and D. Each row is the actual sound being played and the column is the user perception of the sound.

Likert Scale. We asked the subjects if the sound they hear corresponded to the object in the image. Subjects answered using a Likert scale (1:Not at all, 7:Definitely yes). Table 4 presents the responses of the subjects for each example and the mean score.

The mean scores for R, S and D are 5.99, 5.80, and 4.44 respectively.

	Perceived as				
	Alum.	Candy	Bag	Bottle	Soda
Alum.	119	1	1	2	1
Candy	9	105	7	3	0
Bag	2	0	122	0	0
Bottle	1	1	3	102	16
Soda	1	0	1	63	59

Table 1: Subject responses for study A, condition R. Each row is the actual sound being played and the column is the user perception of the sound.

	Perceived as				
	Alum.	Candy	Bag	Bottle	Soda
Alum.	82	27	1	4	10
Candy	15	102	5	2	0
Bag	15	26	82	0	1
Bottle	2	6	2	85	29
Soda	5	0	0	0	119

Table 2: Subject responses for study A, condition S.

	Perceived as				
	Alum.	Candy	Bag	Bottle	Soda
Alum.	46	26	4	18	30
Candy	15	93	8	8	0
Bag	11	33	7	51	22
Bottle	1	3	0	46	74
Soda	0	0	0	3	121

Table 3: Subject responses for study A, condition D.

	Mean	Alum.	Candy	Bag	Bottle	Soda
R	5.99	6.41	5.70	6.61	6.56	4.67
S	5.80	5.38	5.79	5.59	5.73	6.50
D	4.44	4.41	5.41	1.64	4.19	6.58

Table 4: Subject responses for study B.