

Comparative Analysis of Sizzle Words on the Internet

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Background

Many people can post tasty words easily on the Internet.

- Users post their real impressions of foods on **microblogs.**
- Many original recipes are posted easily on **user-generated recipes sites.**
- Advertises of foods are on **Web sites** of companies and restaurants.

Many tasty words are used
on the Internet

Background

-For example

● “Wow, the steak is very **juicy!**” on **Twitter.**

● The recipe named

“**Spicy** Curry with Many Vegetables”

is posted on **user-generated recipes site.**

● A Company **Web site**

“The cheese cake is **seasonal**” .



These tasty words apparently
differ among Internet media

Propose

Tasty words are such as
'juicy', 'spicy', and 'seasonal'



DEFINE



Sizzle Words *1

*1 M. Ohashi, A. Muto, M. Yamamoto, M. Tamekuni, A. Kumida, F. Sibusawa, and Y. Ogawa.
A sense and word of "Delicious" and a generation of food texture.
BMTF publisher, 2010.

Propose

Ohashi clustered three types of sizzle word.

- **Taste-type:** Feeling in sense of taste and smell
e. g. Spicy, Sweet, Creamy...
- **Texture-type:** Feeling in sense of touch and hearing
e. g. Thick, Crispy, Moist...
- **Information-type:** Understanding as knowledge
e. g. In season, Premium, Healthy...

They analyzed 220 Sizzle Words using questionnaire research methods.

We use 90 Sizzle Words in this research.

Propose

We compare and analyze three Internet media such as Twitter, user-generated recipes site, and ordinary web pages by using Sizzle Words.

- Twitter

->Many eating experiences are posted.



- Ordinary Web pages

->There are much advertisement.



- Recipe sites

->Many Sizzle Words are used for being highlighted.



We compare and analyze
feature of these three Internet media

Analysis three media

We extracted 90 words from their proposed Sizzle Words and the 1,025 food names.

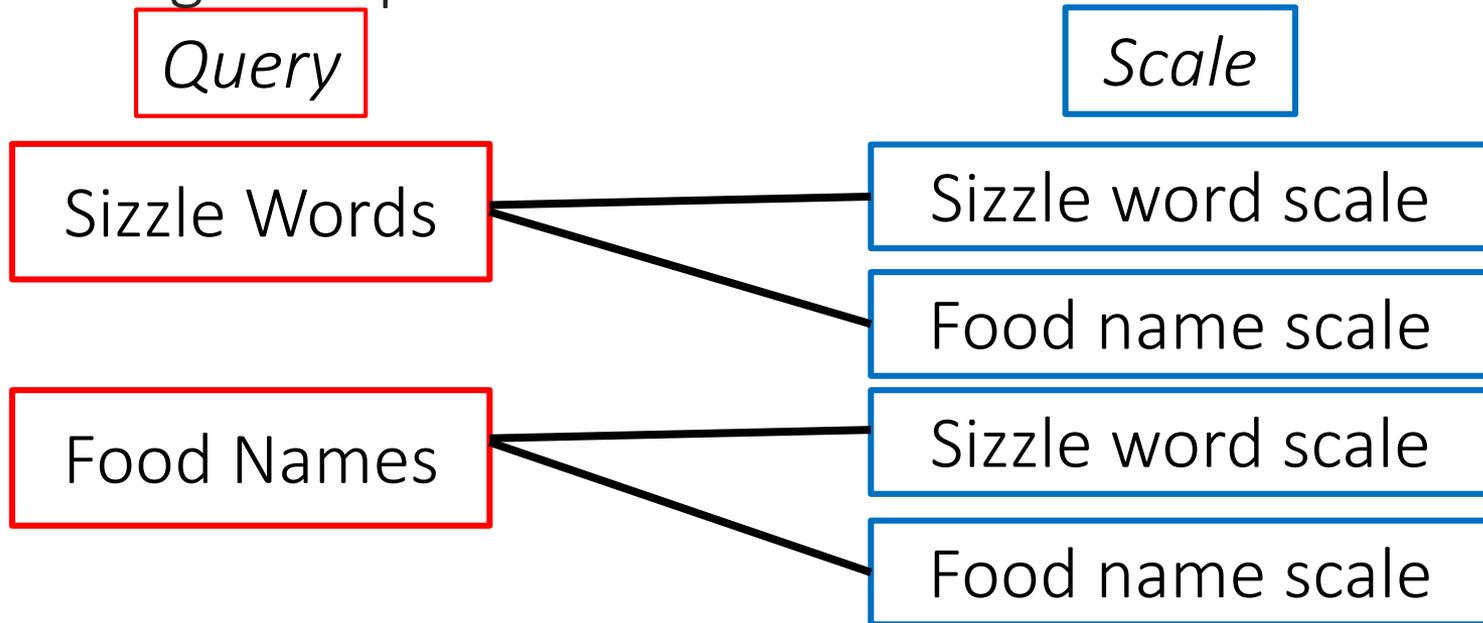
We analyze by using the Dice coefficient.

$$D = 2 \times \frac{|X \cap Y|}{|X| + |Y|}$$

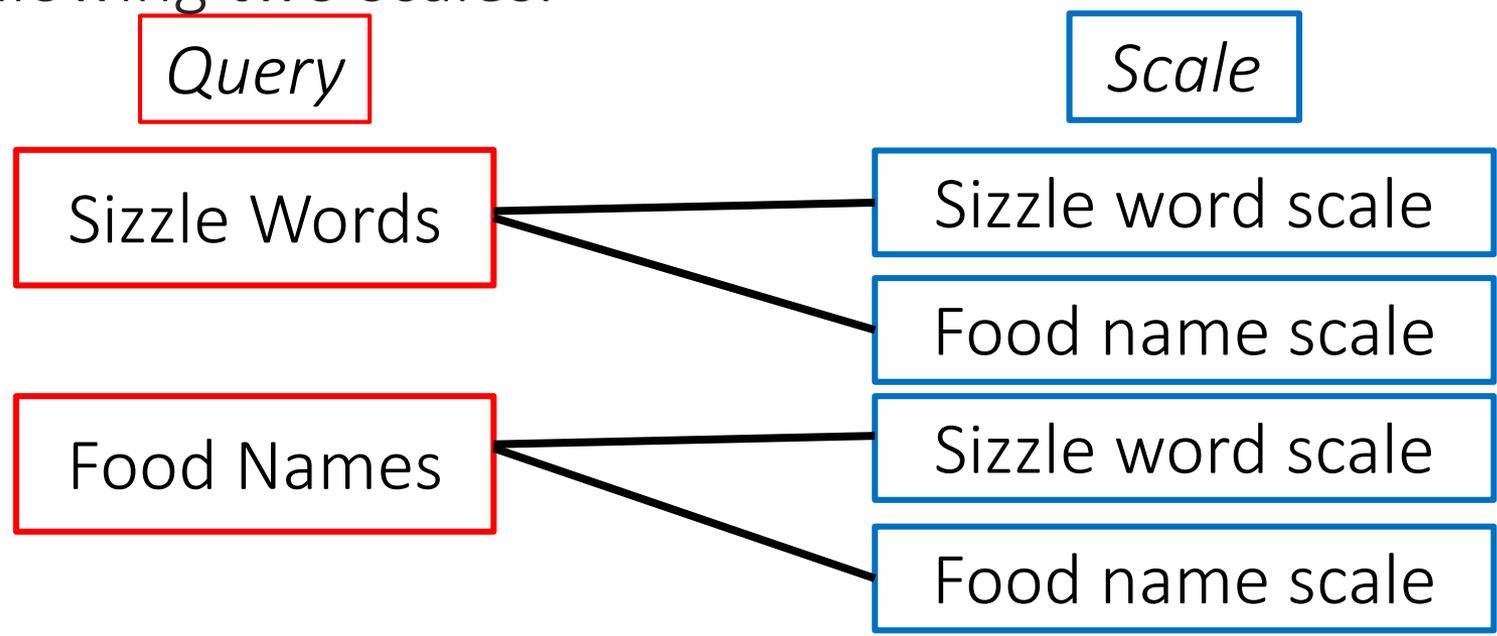
- X stands for the number of Tweets/recipe/Web page included in food names.
- Y denotes the number of Tweets/recipe/Web page that include Sizzle Words.

How to analyze

We analyze Sizzle Words on Tweets, we use the following two queries and two scales.



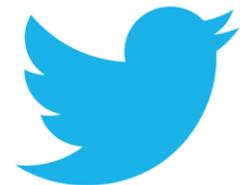
- Sizzle word scale:
Ranking of Sizzle Words and food names that co-occur with the Sizzle Words.
- Food name scale:
Ranking of food names and Sizzle Words that co-occur with the food names.



How to analyze of Sizzle Words in Tweets

We analyze Tweets because users can post their food impressions in Tweets easily in real time.

1. We extract 90 (Sizzle Words) \times 1,000 (Tweets) = 90,000 (Tweets) by searching Tweets using 90 Sizzle Words.
2. We also randomly extract 90,000 Tweets that do not include Sizzle Words.
3. We calculate relation of sizzle words and food name by using Dice coefficient based on 'Sizzle word scale' and 'Food name scale'.



Result of Tweets (Query: Sizzle Word)



Sizzle Word /Food	Food /Sizzle Word	Dice	Sizzle Word /Food	Food /Sizzle Word	Dice	Sizzle Word /Food	Food /Sizzle Word	Dice
Sizzle Word scale								
Freshly Deep-Fried	Potato	0.307	Melty	Gratin	0.175	Thick	Ramen	0.018
	Chicken	0.272		Cheese	0.117		Cream	0.016
	Bacon	0.267		Tomato	0.086		Cheese	0.010
Food Name scale								
Hamburg steak	Superb	0.013	Donut	Freshly Deep-Fried	0.013	Shrimp	Crisp and Fried	0.013
	Homemade	0.006		Sakusaku	0.004		Spicy	0.006
	Healthy	0.006		Healthy	0.004		Homemade	0.004

- When users Tweet actual impressions, they usually use taste-type and texture-type Sizzle Words.
- Information-type sizzle words appear to be used sometimes for advertisement. But there are few Tweet for advertisement.

Users of Twitter can post only 140 letters.

Many Tweets are actual impressions of users of real-time.

How to Analyze of Sizzle Words in Ordinary Web Pages

The relations of Sizzle Words and food names differ between Twitter and ordinary web pages.

Because a user's real impressions of foods are posted on Twitter. We analyze Sizzle Words in ordinary web pages.

1. We used the same Sizzle Words (90 words) and food name (1,025).
2. We use the top 100 results of Google to analyze them by using the following two types of query: food name and Sizzle Words.
3. We divide each query according to viewpoints such as Sizzle word scale, Food name scale.



Result of Ordinary Web Pages (Query: Sizzle Word)



Sizzle Word	1-a Sizzle word scale								
	Freshly Deep-Fried	Tempura	0.374	Melty	Cheese	0.291	Thick	Cream	0.020
		Potato	0.246		Cream	0.158		Cheese	0.018
		Potato crisps	0.230		Fresh cream	0.113		Ramen	0.018
	1-b Food name scale								
	Hamburg steak	Juicy	0.012	Donut	Freshly Deep-Fried	0.010	Shrimp	Puripuri	0.010
		Hukkura	0.010		Freshly cooked	0.006		Juwa	0.006
		Plain aftertaste	0.010		Creamy	0.006		Freshly Deep-Fried	0.006

- When query is a sizzle word, almost food names are general.
- There are few Information-type Sizzle Words when query is a Sizzle Word.

When query is Information-type Sizzle Word, resulting web pages are not many food pages.

Result of Ordinary Web Pages (Query: Food Name)



Food Name	2-a Sizzle word scale								
	Freshly Deep-Fried	Tempura	0.224	Melty	Yudofu	0.048	Thick	Cheddar Cheese	0.362
		Kushi-Katsu	0.075		Onion gratin soup	0.040		Thomas Juice	0.250
		Sata Andagi	0.067		Nectar	0.039		Nectar	0.194
	2-b Food name scale								
	Hamburg steak	Juicy	0.020	Donut	Handmade	0.015	Shrimp	Puripuri	0.004
		Hukkura	0.013		Cleaving	0.007		Natural	0.004
Handmade		0.009	Mystic		0.006	Seasonal		0.004	

- When query is food name, there are more specific food names such as ‘Cheddar cheese’ and ‘Onion gratin soup’.
- Many information-type Sizzle Words are used, such as ‘Handmade’, ‘Natural’ and ‘Seasonal’. These Sizzle Words are not user’s experiment impression.

There are many advertisement of food companies and restaurants, and brand names.

How to analyze of Sizzle Words in a Recipe site



Users of a user-generated recipe site are extremely interested in food.

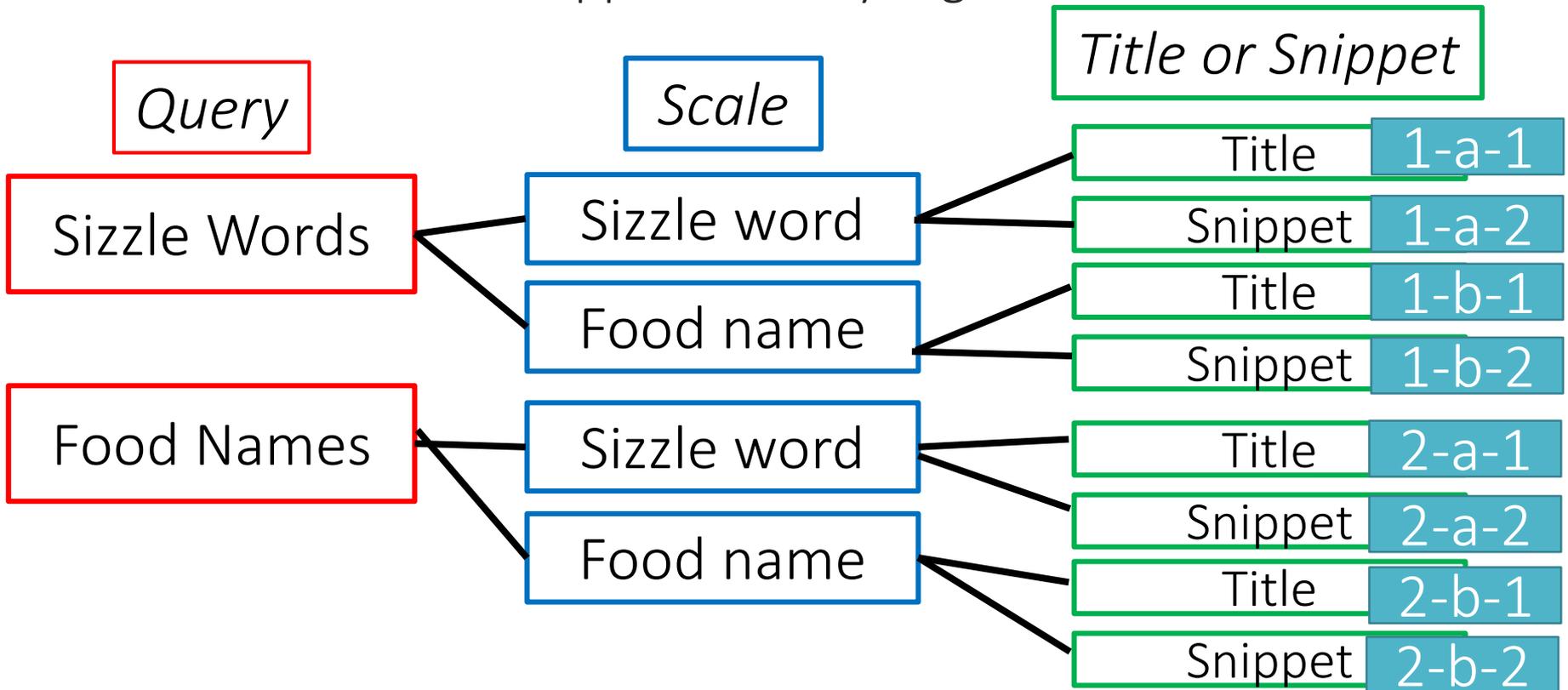
And they might use many Sizzle Words. We analyze 'CookPad'*2.

1. We used the same Sizzle Words (90 words) and food name (1,025).
2. We use each top 100 search results for recipe pages from CookPad using Sizzle Words or food names.
3. We extract the title and a snippet from each.
4. We analyze title and snippet by dividing each query according to viewpoints such as Sizzle word scale, Food name scale.

*2 CookPad is the most popular user-generated recipe site in Japan.

How to analyze of Sizzle Words in a Recipe site

We divide Title or Snippet for analyzing.



Result of a Recipe site (Query: Sizzle Word)



1-a-1 Sizzle word scale in title								
Freshly Deep-Fried	Spring Rolls	0.095	Melty	Cheese	0.133	Thick	Chocolate	0.187
	Croquette	0.092		Chocolate	0.065		Gateau Chocolat	0.088
	Donut	0.071		Toast	0.041		Cream	0.076
1-a-2 Sizzle word scale in snippet								
Freshly Deep-Fried	Croquette	0.058	Melty	Chocolate	0.187	Thick	Cheese	0.052
	Spring Rolls	0.047		Gateau Chocolat	0.088		Caramel	0.038
	Cheese	0.038		Truffle	0.077		Fresh Caramel	0.034
1-b-1 Food name scale in title								
Hamburg steak	Juicy	0.135	Donut	Freshly Deep-Fried	0.071	Shrimp	Puripuri	0.290
	Hukkura	0.116		Mochimochi	0.057		Crisp and Fried	0.024
	Juwa	0.073		Glutinous	0.044		Full-fledged	0.022
1-b-2 Food name scale in snippet								
Hamburg steak	Juicy	0.116	Donut	Freshly Deep-Fried	0.047	Shrimp	Puripuri	0.221
	Juwa	0.099		Mochimochi	0.038		Crisp and Fried	0.021
	Hukkura	0.099		Glutinous	0.029		Full-fledged	0.017

- There are many general foods.

Cooking is easy and popular for users of a recipe site .

- Information-type sizzle words are not used a lot.

Recipes are unrelated to Information-type Sizzle Word such as 'Natural'.

Result of a Recipe site (Query: Food Name)



2-a-1 Sizzle word scale in title								
Freshly Deep-Fried	Donut	0.031	Melty	Fresh Caramel	0.035	Thick	Gateau Chocolat	0.052
	Spring Rolls	0.024		Marshmallow	0.021		No-bake CheeseCake	0.035
	Minced meat	0.024		Truffle	0.020		Carbonara	0.032
2-a-2 Sizzle word scale in snippet								
Freshly Deep-Fried	Ganmodoki	0.058	Melty	Fresh Caramel	0.047	Thick	Gateau Chocolat	0.061
	Satsuma-age	0.027		Marshmallow	0.019		Carbonara	0.030
	Donut	0.027		Truffle	0.018		No-bake CheeseCake	0.029
2-b-1 Food name scale in title								
Hamburg steak	Juicy	0.032	Donut	Freshly Deep-Fried	0.031	Shrimp	Puripuri	0.023
	Hukkura	0.024		Mochimochi	0.024		Superb	0.007
	Healthy	0.020		Fuwafuwa	0.023		Creamy	0.005
2-b-2 Food name scale in snippet								
Hamburg steak	Juicy	0.029	Donut	Freshly Deep-Fried	0.027	Shrimp	Puripuri	0.060
	Hukkura	0.021		Mochimochi	0.022		Sakusaku	0.007
	Healthy	0.017		Fuwafuwa	0.019		Creamy	0.007

- There are more sizzle words in the title than the snippet.

Users want their recipe to be read by more and more people. Their title is interested in reading users.

- Information-type sizzle words are not used a lot.

Recipes are unrelated to Information-type Sizzle Word.

Comparison of three media

We generate the 6 following hypotheses.

1. Information-type Sizzle Words are used for advertisement. Taste-type and texture-type Sizzle Words describe a user's eating experience.
2. Among these three media, Twitter has the most sentences (Tweets) that include Sizzle Words .
3. Tweets are more related to users' eating experiences than statements of the other two media.
4. Of the three media, user-generated recipe sites have the most appealing Sizzle Words.
5. Of the three media, user-generated recipe sites have the best pairs of food names and Sizzle Words.
6. Twitter and user-generated recipe sites have few advertisements in, but many advertisements are used on ordinary web sites.

Hypotheses 1

Information-type Sizzle Words are used for advertisement.

Taste-type and texture-type Sizzle Words describe a user's eating experience.

TRUE

User Impression

'This shop's cheese cake is **melted**, and I will want to eat again.'

Advertisement

'We sell **seasonal** food'

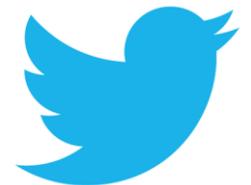
Hypotheses 2

Among these three media, Twitter has the most sentences (Tweets) that include Sizzle Words .

FALSE

The Tweets that include Sizzle Words are fewer than 1% of Tweets.

Users of Twitter do not Tweet for only about foods.



Hypotheses 3

Tweets are more related to a user's eating experiences than statements of the other two media.

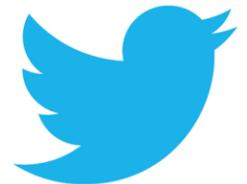
TRUE

Twitter users Tweet their eating experiences.

Taste-type and Texture-type Sizzle Words are more included than Information-type them in eating experiences.

'This shop's cheese cake is **melted**, and I will want to eat again.'

'Wow, the steak is very **juicy**!'



Hypotheses 4

In the three media, user-generated recipe sites have the most appealing Sizzle Words.

TRUE

There are many attractive Sizzle Words from which we can imagine delicious foods easily.

'Soft and melted cheese Hamburg steak '

'Light and fluffy homemade pancakes '

Users of a recipe site use many Sizzle Words.

They want to be their recipe read by more and more people.



Hypotheses 5

In the three media, user-generated recipe sites have the best pairs of food names and Sizzle Words.

TRUE

Users of a recipe site want their recipe pages to present delicious food.

They want their recipe popular.



Hypotheses 6

Twitter and user-generated recipe sites have few advertisements in, but many advertisements are used on ordinary web sites.

TRUE

Taste-type and texture-type Sizzle Words describe a user's eating experience.

Information-type Sizzle Words are used for advertisement.

An ordinary web page has many information-type Sizzle Words.

'Today's special is **seasonal** salad '

' **Handmade** Hamburg steak '.

They are clearly advertisement sentences

Conclusion & Future Work

Conclusion

- We compared Sizzle Words use among Twitter, ordinary web pages, and user-generated recipe sites.
- The Sizzle Word characteristics were found to differ among media.

Future Work

- We will analyze Twitter based on time and season.
 - > Tweets are impression of users of real time.
- We will have a questionnaire to support objective analysis of people.
 - > In this paper, we analyze subjective.
- We will develop a food personalization system or food search system that can search for foods using Sizzle Words.