

# Reading #2

LING572

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Week 3: 1/21/2010

# Papers

- Adwait Ratnaparkhi (1997)
  - Sections 1-3
  - Section 4-8
  - You can skip the proof
- Adam Berger et al. (1996)
  - Sections 1-3.3

# Notation

	Input	Output
(Berger et. al., 1996)	$x$	$y$
(Ratnaparkhi, 1997)	$b$	$a$
(Ratnaparkhi, 1996)	$h$	$t$
(Klein and Manning, 2003)	$d$	$c$

We follow the notation in (Berger et al., 1996)

# Questions

(Q1): Let  $P(X=i)$  be the probability of getting an  $i$  when rolling a dice. What is the value of  $P(x)$  with the maximum entropy if the following is true?

(a)  $P(X=1) + P(X=2) = \frac{1}{2}$

(b)  $P(X=1) + P(X=2) = \frac{1}{2}$  and  $P(X=6) = \frac{1}{3}$

(Q2) In the text classification task,  $|V|$  is the number of features,  $|C|$  is the number of classes. How many **feature functions** are there?

Due: Next Thursday (1/28)