

The Extended Paraphrase Typology (EPT)

1. Meta categories and structure of the typology

Category	Atomic Type	Sense preserving
<u>Morphology based changes</u>	Inflectional Changes	Positive and negative
	Modal Verb Changes	Positive only
	Derivational Changes	Positive only
<u>Lexicon based changes</u>	Spelling changes	Positive only
	Same polarity substitution (habitual)	Positive only
	Same polarity substitution (contextual)	Positive and negative
	Same polarity substitution (named entities)	Positive and negative
	Change of format	Positive only
<u>Lexical-syntactic based changes</u>	Opposite polarity substitution (habitual)	Positive and negative
	Opposite polarity substitution (contextual)	Positive and negative
	Synthetic/analytic substitution	Positive only
	Converse substitution	Positive and negative
<u>Syntax based changes</u>	Diathesis alternation	Positive and negative
	Negation switching	Positive and negative
	Ellipsis	Positive only
	Coordination changes	Positive only
	Subordination and nesting changes	Positive only
<u>Discourse based changes</u>	Punctuation changes	Positive only
	Direct/indirect style alternations	Positive and negative
	Sentence modality changes	Positive only
	Syntax/discourse structure changes	Positive only
<u>Other changes</u>	Addition/Deletion	Positive and negative
	Change of order	Positive only
	Semantic based	Positive and negative
<u>Paraphrase extremes</u>	Identity	Positive only
	Non-paraphrase	Negative only
	Entailment	Negative only

2. Examples of atomic types

Morphology based changes

- Inflectional changes:

- Positive sense preserving:
“It was with difficulty that the course of **streets** could be followed”
“You couldn’t even follow the path of the **street**”
- Negative sense preserving:
“You can’t travel from Barcelona to Mallorca with the **boat**.”
“**Boats** can’t travel from Barcelona to Mallorca.”

- Modal-verb changes:

- Positive sense preserving:
“I was still lost in conjectures who they **might** be.”
“I was pondering who they **could** be.”

- Derivational changes:

- Positive sense preserving:
“I have heard many accounts of him all **differing** from each other.”
“I have heard many **different** things about him.”

Lexicon based changes

- Spelling changes:

- Positive sense preserving:
“**doesn’t** fit the company’s long-term strategy.”
“**does not** fit in our long-term growth strategy.”

- Same-polarity substitution (habitual):

- Positive sense preserving:
“A federal **magistrate** in Fort Lauderdale ordered him held without bail.”
“Zuccarini was ordered held without bail Wednesday by a federal **judge** in Fort Lauderdale, Fla.”

- Same-polarity substitution (contextual):

- Positive sense preserving:
“Meanwhile, the global death toll **approached** 770 with more than 8,300 people sickened since the severe acute respiratory syndrome virus first appeared in southern China in November.”
“The global death toll from SARS **was** at least 767, with more than 8,300 people sickened since the virus first appeared in southern China in November.”
- Negative sense preserving:
“The loonie, meanwhile, continued to **slip** in early trading Friday.”

"The loonie, meanwhile, was on the **rise** again early Thursday."

- Same-polarity substitution (named entities):

○ Positive sense preserving:

He told The Sun newspaper that **Mr. Hussein's** daughters had British schools and hospitals in mind when they decided to ask for asylum."

"**Saddam's** daughters had British schools and hospitals in mind when they decided to ask for asylum -- especially the schools," he told The Sun."

○ Negative sense preserving:

"Yucaipa owned Dominick's before selling the chain to Safeway in 1998 for **\$2.5 billion**."

"Yucaipa bought Dominick's in 1995 for \$693 million and sold it to Safeway for **\$1.8 billion** in 1998."

- Change of format:

○ Positive sense preserving:

"fell 1.5 %"

"fell 1.5 **percent**"

Lexical-syntactic based changes

- Opposite-polarity substitution (habitual):

○ Positive sense preserving:

"Leicester **failed** in both enterprises."

"He **did not succeed** in either case."

- Opposite-polarity substitution (contextual):

○ Positive sense preserving:

"A big surge in consumer confidence has **provided** the only positive economic news in recent weeks."

"Only a big surge in consumer confidence has **interrupted** the bleak economic news."

○ Negative sense preserving:

"Johnson quickly **accepted** the proposal."

"Johnson **rejected** the proposal without hesitation."

- Synthetic/analytic substitution

○ Positive sense preserving:

"A sequence of ideas"

"ideas"

- Converse substitution

○ Positive sense preserving:

"The Geological society of London in 1855 **awarded to him** the Wollaston medal."

"Resulted in him **receiving** the Wollaston medal **from** the Geological society in London in 1855."

- Negative sense preserving:
 “Last Monday, John **bought** the new black car **from** his friend Sam.”
 “Last week, John **sold** his black car to Sam, his friend from high school.”

Syntactic based changes

- Diathesis alternation
 - Positive sense preserving:
 “The guide **drew our attention to** a gloomy little dungeon.”
 “Our attention **was drawn by** our guide **to** a little dungeon.”
 - Negative sense preserving:
 “The president **gave** a speech about his plan to change the Constitution.”
 “The president **was given** a speech about his plan **to** change the Constitution.”
- Negation switching
 - Positive sense preserving:
 In order to move us, it needs **no** reference to any recognized original.”
 “One **does not** need to recognize a tangible object to be moved by its artistic representation.”
 - Negative sense preserving:
 “Frege **did not** say that Hesperus is Phosphorus.”
 “Frege said that Hesperus is **not** Phosphorus.”
- Ellipsis
 - Positive sense preserving:
 “In the scenes with Iago **he** equaled Salvini, yet did not in any one point surpass him.”
 “**He** equaled Salvini, in the scenes with Iago, but **he** did not in any point surpass him or imitate him.”
- Coordination changes
 - Positive sense preserving:
 “It is estimated that he spent nearly \$10,000 on these works. In addition he published a large number of separate papers.”
 “Altogether these works cost him almost \$10,000 **and** he wrote of small papers as well.”
- Subordination and nesting changes
 - Positive sense preserving:
 “The Russian law, which limits the percentage of Jewish pupils in any school, barred his admission.”
 “The Russian law had limits for Jewish students so they barred his admission.”

Discourse based changes

- Punctuation changes
 - Positive sense preserving:
“Swartz repaid it in full, **with interest**, according to his lawyer, Charles Stillman.”
“Swartz repaid it **with interest**, according to his lawyer, Charles Stillman.”
- Direct/indirect style alternations
 - Positive sense preserving:
“She is mine”, said the Great Spirit.
The Great Spirit said that she is hers.
 - Negative sense preserving:
“I’m on my way!”, said Peter and hung up his phone.
Peter called Ana to tell her that she is on her way.
- Sentence modality changes
 - Positive sense preserving:
“The real question is, will it pay? Will it please Theophilus P. Polk or vex Harriman Q. Kunz?”
“He do it just for earning money or to please Theophilys P. Polk or vex Hariman Q. Kunz.”
- Syntax/discourse structure changes
 - Positive sense preserving:
“How he would stare!”
“He would surely stare!”

Other changes

- Addition/Deletion
 - Positive sense preserving:
“**One day**, she took a hot flat-iron, removed my clothes, and held it on my naked back until I howled with pain.”
“As a proof of bad treatment, she took a hot flat-iron and put it on my back after removing my clothes.”
 - Negative sense preserving:
“Legislation making it harder for consumers to erase their debts in bankruptcy court won overwhelming House approval in March.”
“Legislation making it harder for consumers to erase their debts in bankruptcy court won speedy, House approval in March **and was endorsed by the White House.**”

- Change of order
 - Positive sense preserving:
“**First**, we came to the tall palm trees.”
“We got to some rather biggish palm trees **first**. “
- Semantic based
 - Positive sense preserving:
“The scenery was altogether more tropical.”
“Which added to the tropical appearance.”