A Survey of Idiomatic Preposition-Noun-Verb Triples on Token Level

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Motivation

In previous work, we focused on the identification of idiomatic multiword expression (MWE) **types**, like e.g.:

MWE	Idiomatic meaning	Literal meaning
in Leben rufen	to initiate	"to call to life"
unter Teppich kehren	to hide/conceal	"to sweep under carpet"
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... but if we have a closer look at them, we see that
→ some of them can only have an idiomatic meaning
→ while others could also have a literal meaning (theoretically)

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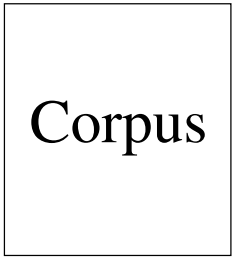
→ We do **not** present a method of how to deal with this!
→ **Instead**, we give an impression of the quantitative dimension of the problem:

we **manually** annotated a huge dataset

Preprocessing

Extraction of MWEs to be annotated



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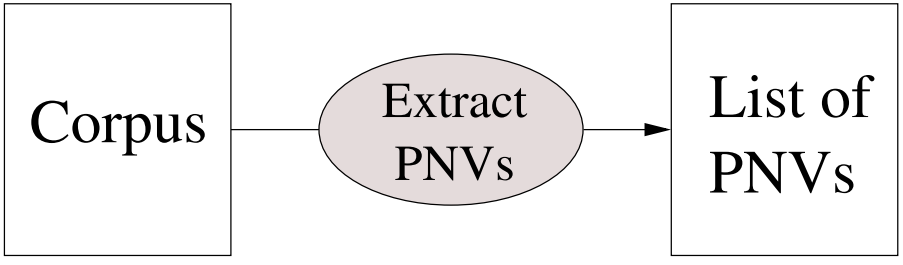

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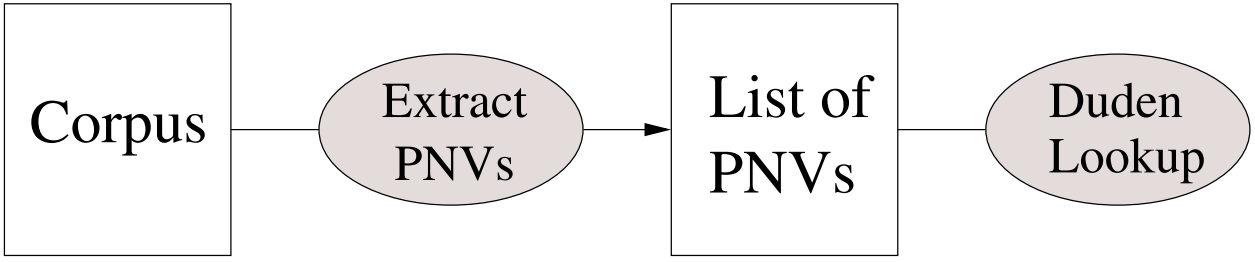

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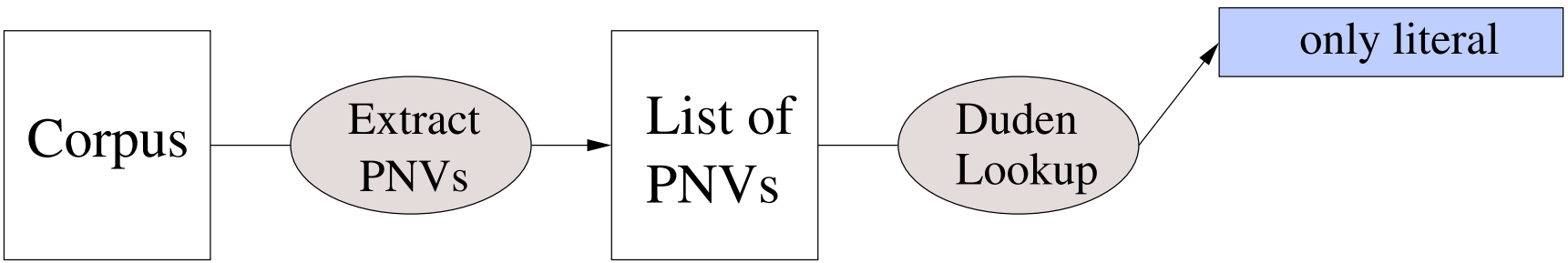

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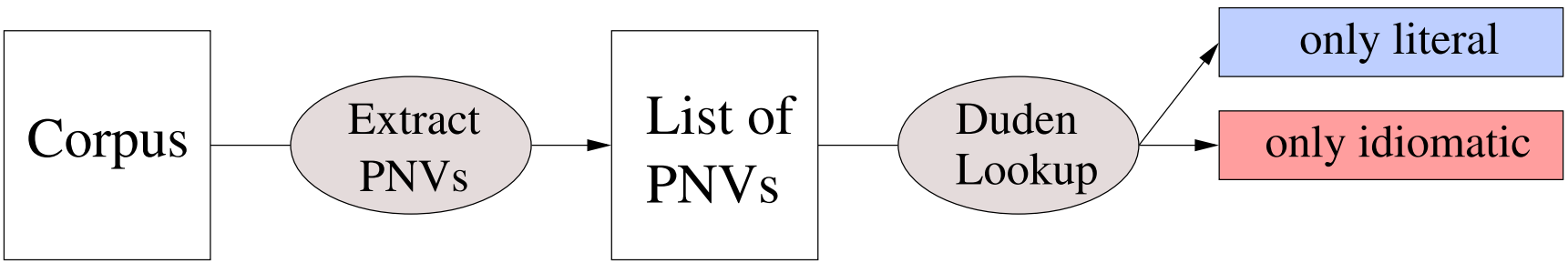

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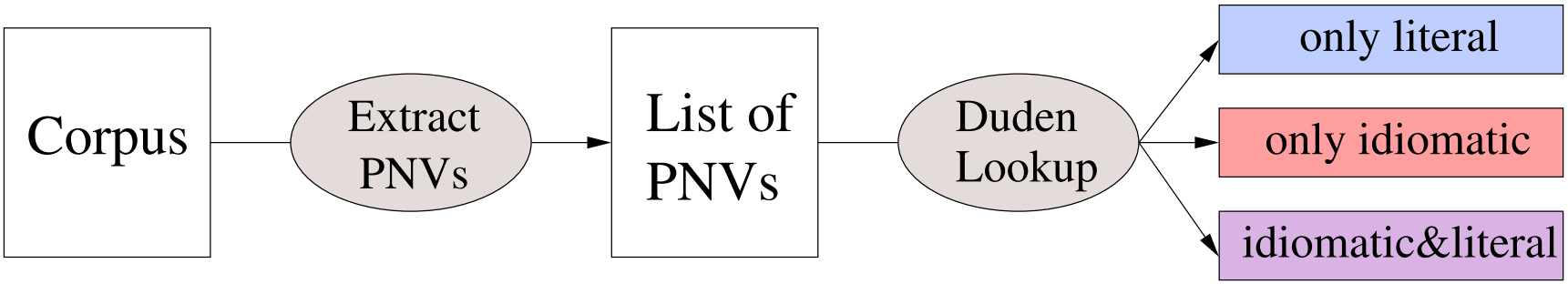

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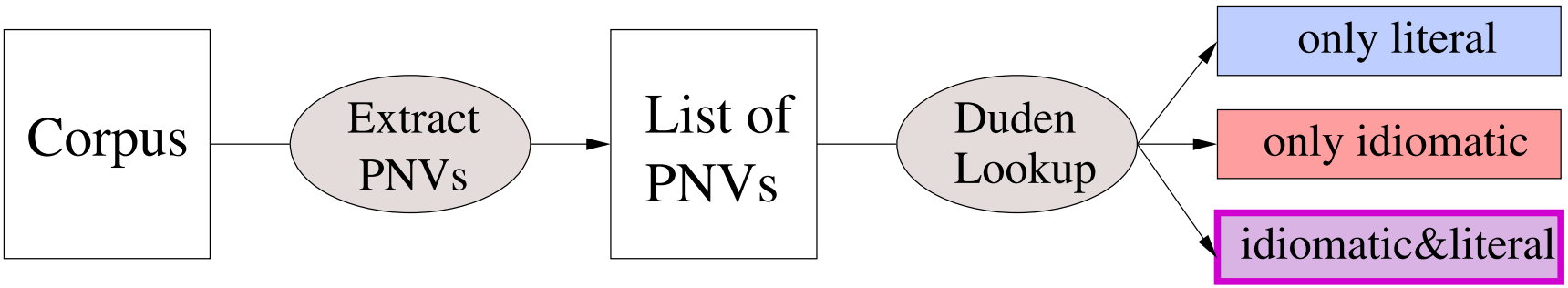

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Data and Tools

Data:

corpus	size	years
Frankfurter Allgemeine Zeitung	70Mio	97/98
EUROPARL	35Mio	96-06

→ Assumption: literal instances in newspaper,
but more rarely in EUROPARL

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Tools:

- FSPAR, German dependency parser
- PERL scripts

Extraction of Preposition-Noun-Verb Triples

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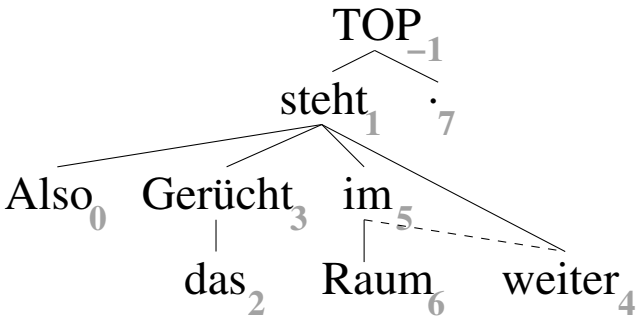

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1	steht	VVFIN	stehen	3:Sg:Pres:Ind*	-1	TOP
2	das	ART	d	|	3	SPEC
3	Gerücht	NN	Gerücht	Nom:N:Sg	1	NP:1
4	weiter	ADV	weiter	|	1||5	ADJ
5	im	APPRART	in	Dat:M:Sg	1	ADJ
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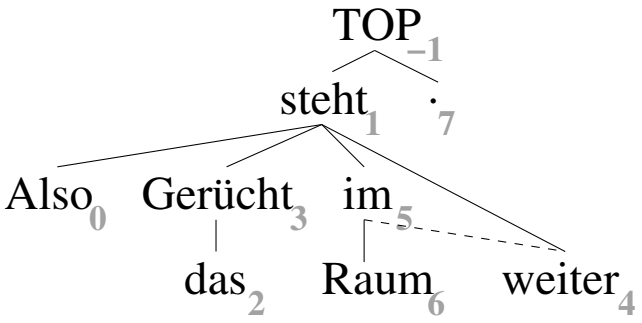

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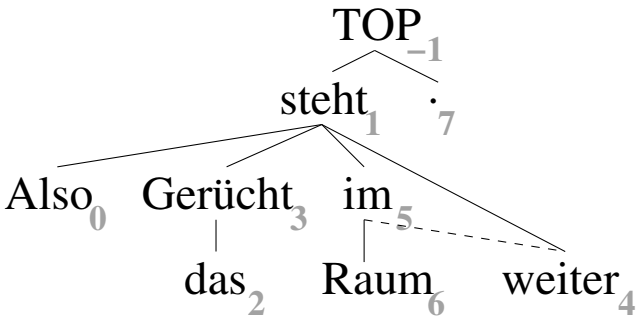

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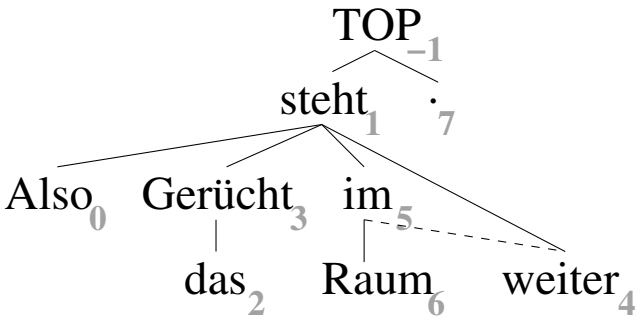

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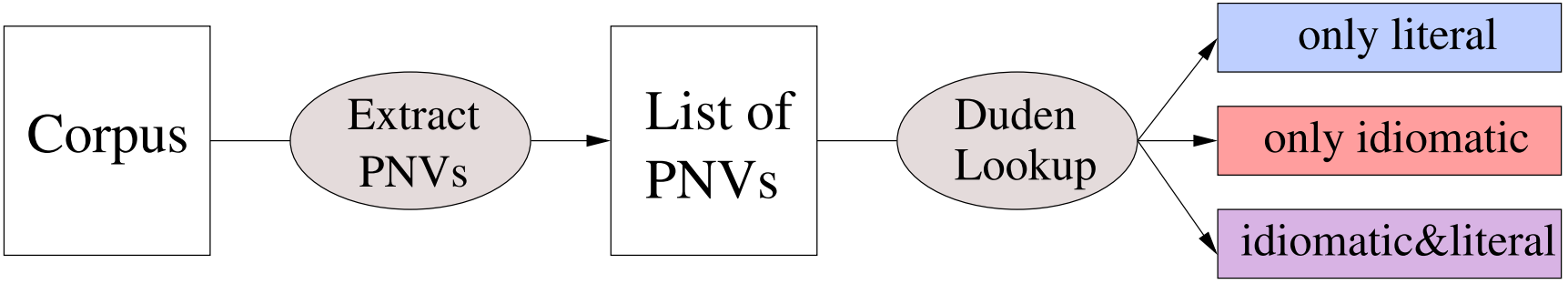

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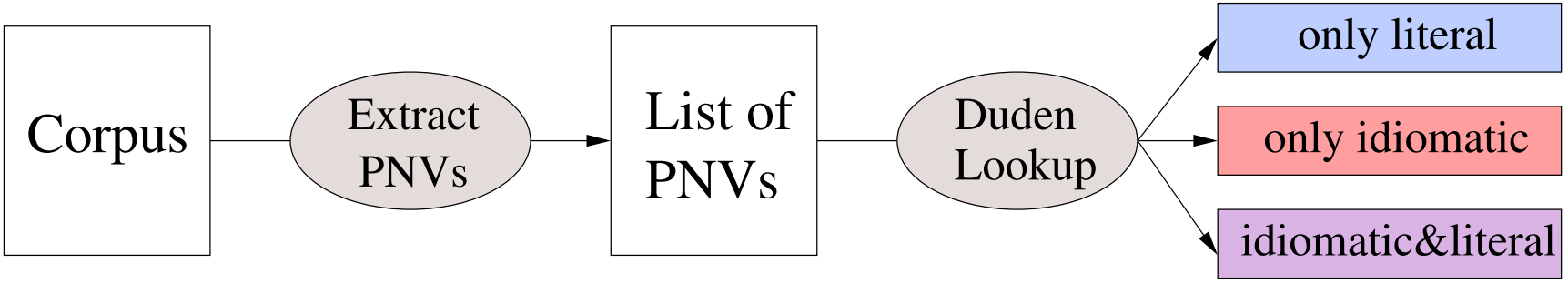

Idiomatic PNVs amongst 1,000 most frequent:

Corpus	in *Duden*
FAZ	155
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Total	196

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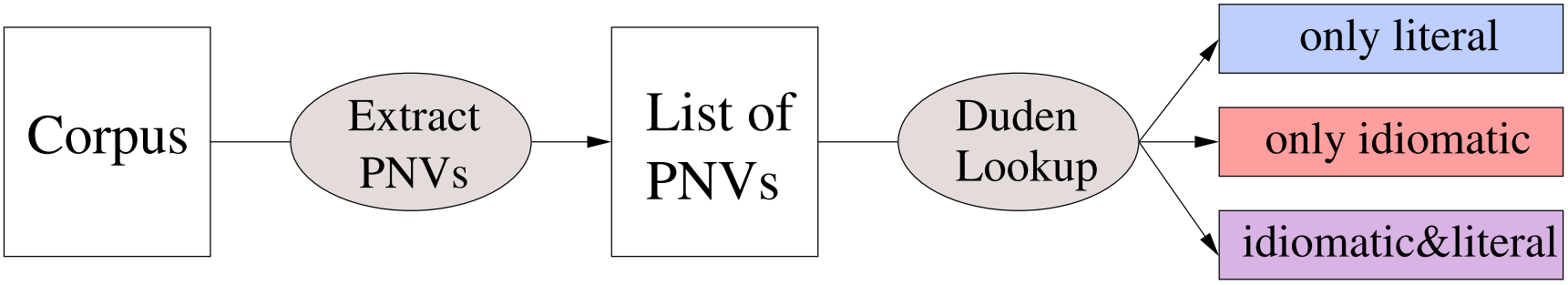

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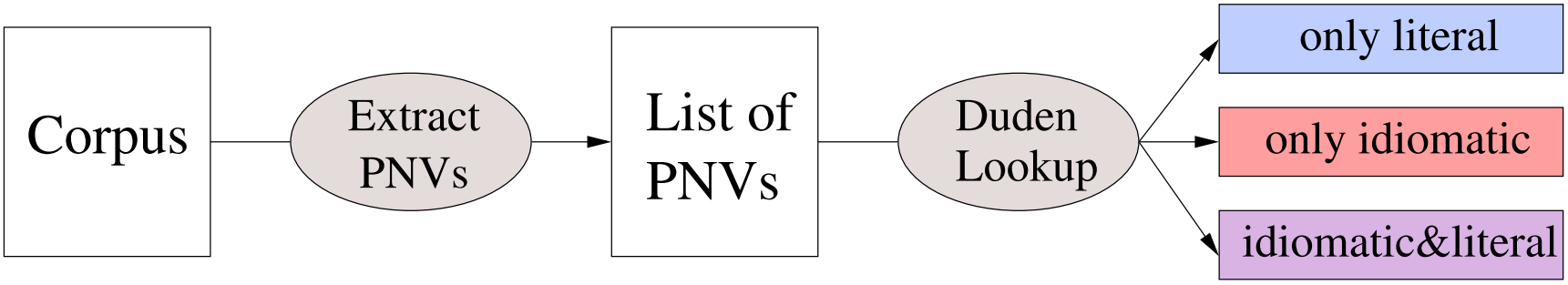

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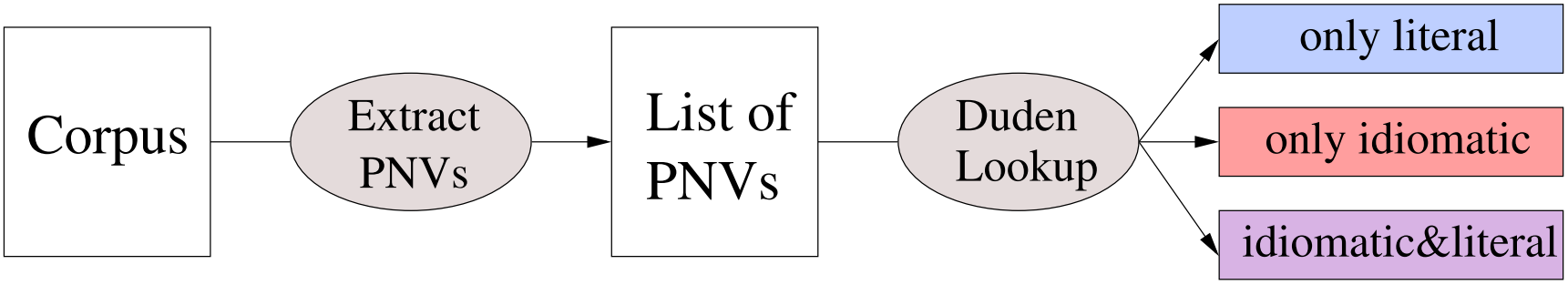

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auf Schlauch stehen ("to stand on a hose", to have a mental block)

Manual Annotation

- 100 sentences for each PNV-Triple, randomly extracted
- annotated by two German native speaker (independently)
  → agreement in 6,550 of 6,690 cases of FAZ (97.9%)
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total	**9,740**

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- annotated categories: idiomatic (I), literal (L), ambiguous (A), parsing/extraction error (X).

corpus	all	I	L	A	X
FAZ	6,690	6,176	345	75	94
EUROPARL	3,050	2,937	31	14	68
total	**9,740**	9,113	376	89	162

Selected Examples

PNV	FAZ			EUROPARL		
	L	I	A	L	I	A
auf Seite stehen to stand on (so.'s) side	16	75	3	12	86	1
zu Einsatz kommen to come into operation	1	97	1	1	98	0
zu Fall bringen to bring down sth./sb.	17	82	1	0	47	0

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Idiomatic instance (EP):
Der Versuch der Tabaklobby , dieses Gesetz zu Fall zu bringen , ist absurd .
"The attempt of the tabacco lobby to kill the law is absurd.

Distribution of Morpho-Syntactic Features

Example taken from FAZ

in Raum stehen

	#PNVs	DET			FUS		NUM	
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literal	33	2	24	1	19	14	28	5
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Literal use

In *den besseren* **Räumen standen** *Öfen, an denen er sich wärmte.*
"In the superior rooms stood stoves, at which he himself warmed."
In the superior rooms were stoves at which he warmed himself.

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Idiomatic use

Widersprüche **stehen** *ungelöst* **im Raum**.
"Contradictions stand unresolved in the room"
There are unresolved contradictions to be dealt with.

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Ambiguous use

Sie **steht** *als Manifest einer neuen Wohnkultur* **im Raum** *und macht heute jeden Besucher zum potentiellen Bewohner.*
"It stands as manifest of a new living home decor in the room and makes today every visitor to a potential resident."

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$\rightarrow$ but no similar resource for German!