Does Good Writing Mean Good Reading? An Eye-tracking Investigation of the Effect of Writing Advice on Reading[1]

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Abstract Many writing guides list constructions that writers should avoid, including passives, nominalisations and long complex words and sentences. This study presents an eye-tracking experiment that compared the reading of such supposedly problematic constructions with the reading of their recommended parallel versions in four different Danish LSP texts. While a range of control predictors, including the length of the target constructions and their position in the texts, had significant effects on reading time, there was no effect of whether a target construction followed or opposed the advice given in writing guides. This suggests that, in themselves, the supposed problem constructions are not inherently problematic to understand. Therefore, factors previously put forward as important, such as the information structure of texts and the image the sender wishes to project, should be what influences the choice of constructions rather than simplified rules such as "Avoid passives!". The implications of this finding for writing guides and for company and institutional language policies are discussed.

Keywords text processing, sentence processing, writing guides, language policy, eye tracking, sentence structure, passive constructions, nominalisations

1 Introduction: Good writing

Good writing avoids passive constructions, nominalisations and heavy premodifications, if we are to believe an array of writing handbooks (for English, for instance, Rozakis 2000, Sorenson 2010, Williams 2005; for Danish, Jacobsen/Jørgensen 1992, Jacobsen/Skyum-Nielsen 1996, Salling 2007, Veirup 2002). The claim is that texts that avoid such constructions are more comprehensible, but the empirical evidence is scarce. By their nature, writing handbooks do not tend to include much systematic empirical evidence, only obviously problematic examples and perhaps the odd anecdote, but there is also a lack of scientific studies of how the supposed problem constructions are processed. This article reports an eye-tracking experiment that begins to fill this gap by investigating how Danish readers read constructions that follow or oppose writing advice such as "avoid passives" and "avoid nominalisations". The question is whether the recommended constructions are in fact easier to read – and why or why not?

The constructions that writing guides advise against (henceforth termed *problem constructions* as a shorthand, though the object of this study is to investigate whether they are in fact problematic) are found across a range of texts, but are most characteristic of language for specific purposes (LSP). Although LSP may be both expert-to-expert and expert-to-layman

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communication, the recommendation to avoid the specific problem constructions is most relevant for experts communicating to laymen, whereas the familiarity of the expert receiver with a specific LSP code makes special constructions less problematic in expert-to-expert communication (Bostian/Thering 1987). The present study considers four texts of which one is most accurately classified as expert-to-layman communication, while for the other three texts the receiver groups may be categorised as either laymen or experts or a mixture of the two. All four texts are excerpts of authentic texts taken from different domains.

The constructions investigated in the present study include seven different types, for which the problematic version is compared to the recommended parallel construction. Thus, for instance, passives are compared to actives and nominalisations to verbal constructions. The choice of target constructions was based on Danish writing guides (especially Jacobsen/Jørgensen 1992 and Veirup 2002) because Danish is the language of the experiment reported below, but almost all the recommendations generalise to English (Brown 2001, Callis 2001, Rozakis 2000, Williams 2005; for the specific categories, see the overview of types in table 1).

Table 1: The types of problem constructions and their parallel recommended versions, along with the number of occurrences in the experimental texts and generalisability to English.

Type	**n**	**Problem**	**Recommendation**	**Parallel to English**
Passive	10	Passive verb	Active verb	Yes
Nominal	20	Nominalisation	Verbal construction	Yes
Complex	6	Long complex sentence Long complex word	Dissolved into several shorter sentences or words	Yes
Genitive	7	's-genitive for impersonal construction	Construction with prepositional phrase	Yes, sometimes phrased as grammatical rule
SV-interference	7	(Long) adverbial between subject and verb, or between auxiliary and main verb	Postposed adverbial	Yes for long adverbials between auxiliary and main verb
PP	1	Prepositional phrase premodifying noun	Relative clause postmodifying noun	Problem construction is ungrammatical
Preposed	1	Preposed adverbial	Postposed adverbial	Yes

Of the seven types, passives and nominalisations are the ones that writers are most frequently warned against; passives because they make the text less clear, personal and dynamic, and nominalisations because they may code information so densely and abstractly as to make it difficult to decode. The other problem constructions are overly long and complex words and sentences, 's-genitives compared to constructions using prepositional phrases for impersonal constructions, much material interfering between subject and verb, prepositional phrases premodifying nouns (a strong characteristic of old-fashioned Danish officialese, now rare outside legal language) and long adverbials occurring at the beginning of a clause. The choice of problem constructions for the experiment reported here is motivated by what the central pieces

of writing advice are and which of these can be operationalized for direct comparison in an experiment, but also constrained by which constructions could be found in sufficient numbers in authentic texts for use in the experiment.

Among these constructions, passives have been the target of most attention in the processing literature, probably mainly because in the generative tradition (starting with Chomsky 1957), they are regarded as different and more complex surface structure derivations of the same deep structure as their corresponding active versions. A number of early offline comprehension experiments, i. e. studies measuring comprehension post hoc, showed problems with passives relative to actives (e. g. Forster/Olbrei 1971, Mehler 1963, Miller/McKean 1964), but Slobin (1966) demonstrated that such problems only occurred for reversible passives, and a few online experiments (measuring comprehension as it happens) have shown differences in the opposite direction, with faster processing of passives than actives (see Carrithers 1989).

Although the general advice in writing handbooks is to avoid passives, a more nuanced approach is to consider which structure – active or passive – fits the information structure of the sentence and paragraph (see e. g. Björk/Räisänen 1997, Rozakis 2000). Evidence that information structure also plays a role in online comprehension was found by Olson/Filby (1972), who showed that when a preceding picture or sentence focused on the patient of an event, passive sentences were easier to process than actives, exactly because the passive is the correct encoding of the relevant information structure. Unfortunately, Olsen and Filby's study involved a very small number of both participants and items, and the items were repeated a number of times. It is therefore uncertain to what extent the findings generalise but the results do suggest that a more refined approach than the standard "Avoid passives!" is appropriate.

In the more recent literature, there is also little evidence on how constructions such as passives vs. actives and nominalisations vs. verbal constructions are processed online by readers. The effects of a number of other linguistic factors on processing time and ease have been thoroughly investigated (see for instance overviews of eye movements during reading by Rayner 1998, 2009), but pragmatic factors have been relatively underexplored. One partial exception is the study by Huestegge/Bocianski (2010), who compared the reading of identical passages following passive vs. active and embedded vs. non-embedded structures in German using eye-tracking. Huestegge and Bocianski report some adverse effects on reading time for sentences following passages with embedded structures, but no solid effects of the passive vs. active manipulation, also not when considering the actual problem/recommended construction rather than the following sentence. However, the purpose of their study was to investigate the global rather than local (mainly lexical) effects on eye-movement control, and the authors used a block design (with blocks of multiple exemplars of the same type of construction) in order to optimise the chance of finding such global effects. This makes it questionable to what extent the results generalise to a more natural reading situation. Moreover, the study failed to take length differences between different types of constructions into account.

In sum, experimental studies of the processing of recommended and problem constructions are rare. There are more studies of the comprehension of such constructions, but the findings are not conclusive. Spyridakis/Isakson (1998) studied the comprehension of nominalisations, which are also the largest group of problem constructions in the current experiment, embedded in full texts. The study found no overall benefit for recall of denominalised constructions compared to parallel nominalisations, but did find that native speakers recalled more important idea units expressed in denominalised phrases. This effect seems rather too slender to merit substantial rewriting to avoid nominalisations, but it should be noted that the

nominalisations were relatively common nouns like *result*, *decision* and *behaviour*, whereas efforts to avoid more complex and abstract nominalisations may be warranted.

The studies of Huestegge/Bocianski and Spyridakis/Isakson both focused on one or two specific types of constructions, finding at best partial benefits for the recommended constructions. The same holds for a recent study by Jones et al. (2012), who studied the use of questions rather than statements as headings and the use of pronouns in environmental policy documents. By contrast, studies using more general rewriting of texts to avoid a variety of problem constructions have shown effects on comprehension: Both Coleman (1964) and Duffelmeyer (1979) found shorter reading times for passages that were simplified, at least for poorer readers. Different researchers have also documented improved impact of a range of specialised texts, including juror instructions, medical consent forms and letters from tax authorities (see overview in Jones et al. 2012: 335). The examples given by Jones and colleagues included a range of revisions, affecting both the language and the physical appearance of the text.

The present study also considers a range of different construction types, but focuses not on detailed measures of comprehension of the whole text, but on how a straightforward change from problem to recommended construction affects ease of processing as measured by gaze time for that construction and the sentence it is embedded in. All texts – like a lot of texts we encounter in our highly literate daily lives – include both recommended and problem constructions. Crucially, the effect of construction type in this study is isolated by statistically controlling a range of predictors, most importantly the length of the constructions, which may vary with the change in construction type.

Using as a starting point those writing guides that advise against the problem constructions, the hypothesis of the present experiment would be that the participants in the experiment would gaze longer at the problem constructions than at the parallel recommended versions. This hypothesis is based on the understanding that what readers look at is also what they are mentally processing (the eye-mind assumption of Just/Carpenter 1980) and that longer gaze times indicate more difficult processing. However, a number of factors work against this hypothesis: The relatively high quality of the texts used in the experiment means that the problem constructions may be used in a more appropriate way than in texts of lower quality and therefore may be less problematic to the reader. Consequently, simplistic advice such as "Avoid passives!" – which is what the experimental manipulation tests – may be inappropriate. Further, the variety of problem constructions in the experiment may result in a mixed picture, but this is taken into account in the analyses. Taken together, this indicates that a more complex picture may well emerge.

2 Experimental method

The use of eye-tracking to study text and discourse processing is not so common as it is in the study of lexical and syntactic processing (evidenced by the massive number of references in overview articles such as Rayner 1998, 2009, and Clifton/Staub/Rayner 2007), but for instance Rayner et al. (2006) demonstrated that global text difficulty can be meaningfully studied using eye-movement measures and several other studies have shown effects of discourse factors on eye movements (see overview in Rayner 2009: 1474). Based on this, it is assumed that the eye-tracking measures of gaze time provide a test of the text-processing difficulty that may be involved when reading problem constructions compared to their parallel recommended constructions.

2.1 Texts and items

The experiment involved the reading of four texts which were all excerpts of authentic texts: A leaflet describing the duties of the National Bank of Denmark is mainly targeted at laymen wishing to understand the workings of the National Bank (abbreviation NB), while for the three remaining texts the receiver groups could include both laymen and experts. These were the mission statement of the Danish Department of Justice (JM), an insurance policy from *Lærerstandens Brandforsikring* (LB, a private insurance company), and an e-mail describing changes in the examination rules at the Copenhagen Business School (CBS). Each text occurred either in its original form with no changes or in a revised version; each participant saw only one of these versions. There were two different combinations of text versions (original vs. revised), each of which was presented in two different orders, resulting in four different experimental orders to which participants were assigned randomly. All participants read two original and two revised texts. An overview of this design is presented in table 2.

Table 2: Overview of text orders and versions for each of the four groups that participants were randomly assigned to, and the number of participants in each group.

Group	**Text 1**	**Text 2**	**Text 3**	**Text 4**	**Participants**
1+2	LB	JM	NB	CBS	
1	*Revised*	*Original*	*Revised*	*Original*	5
2	*Original*	*Revised*	*Original*	*Revised*	4
3+4	CBS	NB	JM	LB	
3	*Original*	*Revised*	*Original*	*Revised*	5
4	*Revised*	*Original*	*Revised*	*Original*	6

Most of the revisions were changes from problem constructions to recommended versions, but in order to maximise the number of target constructions in the text, there were also cases where a recommended structure was changed into a problem construction. This means that all versions had both recommended and problem constructions, but because most of the changes were from problem constructions in the originals to recommended constructions in the revised versions, the original texts contained most of the target problem constructions. The texts were checked by two language professionals to ensure that the revised texts were still coherent and that none of the changes seemed unnatural.

There were seven different types of constructions, as outlined in the introduction and listed in table 1 above. All in all, there were 52 problem constructions, each paired with a recommended construction in the other version of the text. For the analysis, areas of interest (AOIs) were defined around each problem or recommended construction, and eye-tracking indicators were measured for these areas.

2.2 Participants

The participants were 27 native speakers of Danish aged 17 to 23 (mean 19.3 years), who read the texts while their eye movements were monitored. Eye-tracking data from 20 participants

were analysed, while for the remaining seven participants, the quality of the eye-tracking record was too poor. This was mainly an issue of the remote eye tracker used for the experiment (see below) registering fixations below the relevant line of text, but also a single case of very few gaze samples being registered by the eye tracker. Data from all 27 participants were used in a supplementary analysis of the reading pace.

The participants fall into two groups, just over half being high school students and the remainder BA students at the Copenhagen Business School (CBS). While the latter group are farther along in the educational system, the former group were enrolled in a special programme for talented high school students and as such on a relatively high academic level. The group difference was included as a variable in the analyses, and it was therefore possible to analyse the data from all participants together. The reason for the two groups of participants was simply availability: the high school students spent a day being introduced to language technology and language experiments, and as part of that, participated in this experiment. This provided eye-tracking data of sufficient quality from 11 participants, which was less than the planned 20 participants, and the rest were therefore recruited from the student body at CBS.

2.3 Apparatus

The experiment was run using a Tobii T120 eye tracker with a 17" screen. The T120 is a remote eye tracker which samples at a rate of 120 Hz, with an accuracy of 0.5°. Using a remote eye tracker may sometimes result in reduced data quality, especially if participants move around a lot, but it has the advantage of providing a relatively naturalistic setting for the experiment: Participants sit and read from a computer screen, while their eye movements are tracked by two cameras built into a panel below the screen. The texts were presented in an 18-point Courier New font, black on a white background.

2.4 Task and procedure

Participants were asked to read four texts, a revised or original version of each of the four experimental texts described above. Participants were asked to read the texts for normal comprehension and were told that questions would be asked for each text to ensure comprehension.

Participants were first given an oral instruction about the task, before their eyes were calibrated using a nine-point grid. After calibration, a brief written repetition of the instruction occurred, and then the four texts followed (in one of the four different combinations of orders and text versions described in section 2.1 and summarised in table 2), each preceded by a page with a heading describing the contents of each text, e. g. "Excerpt from the mission statement of the Department of Justice". The texts were presented one sentence at a time; participants pressed the space bar to proceed from one sentence to the next. This means that, in addition to the eye-tracking record, the time it took the participants to read each sentence may be analysed. At the end of each text, participants were required to answer a comprehension question by clicking one of two possible answers to a question relating to the preceding text; these questions were included to ensure some level of comprehension without encouraging very slow in-depth reading. Most of the participants answered all questions correctly, and all answered at least three out of four questions correctly. The question that received almost all of the error responses was one relating to word choice in a text, with rather similar answer options that in hindsight were probably too difficult to distinguish when the reader's focus had

been on understanding the meaning of the text. The readers' performance on the comprehension questions had no effect on eye movements or reading time. The experiment took around ten minutes, including instruction and debriefing.

3 Results and discussion

3.1 Dependent variables and predictors

The main hypothesis of this study concerns the effect of problem vs. recommended constructions on gaze time. Consequently, the main dependent variable of the study was the total fixation duration on the problematic and recommended AOIs, i. e. for each construction the sum of all fixations on that construction. This was preferred as the most informative variable over other eye-tracking measures, such as individual fixation duration and number of fixations, because total fixation duration best reflects the focus on overall reading-time benefits for recommended as opposed to problem constructions. There is no strong reason to assume that individual fixations would vary much as a function of whether the construction was recommended or problematic. There might be an effect for the number of fixations, but the information in this variable overlaps to a great extent with total fixation duration and, consisting of discrete numbers (of fixations) rather than the continuous variable time, it is less informative and more problematic for statistical analysis.

A supplementary analysis used as a dependent variable the speed with which participants read each sentence. Those sentences that contained only one target construction were analysed, as described in section 3.5. Although the sentence reading time is less sensitive than the eye-tracking measure, it has the advantage that it includes the reading of the entire sentence. It may thus include what the eye-tracking literature calls spillover effects: cases where effects of the target construction manipulation are manifested in the gaze time not only on the critical AOI, which is made up of the target construction, but also on other regions of the relevant sentence. This secondary analysis loses statistical power because sentences with multiple target constructions could not be analysed, but gains some power because data from all 27 participants can be analysed.

The two dependent variables were analysed in regression models with a range of predictors, investigating to what extent total fixation duration and reading pace varied as a function of different properties of the items and participants. The main, hypothesis-driving predictor is of course whether a target construction is a problem construction or the recommended parallel of the problem construction, e. g. whether it is active or passive, a nominalisation or a verbal construction etc.

In order to investigate whether this main factor Construction Type, with the values Problem and Recommended, had an effect on reading times, it was necessary to take into account a range of control predictors. In general, there are two ways of dealing with control predictors: one is experimental control where two categories of experimental items like the ones in this study are matched in terms of all relevant control predictors and then compared in a simple statistical model. However, such experimental control is not possible in a study like the present one, since the critical constructions vary in a number of ways, not least in length of the construction, where for instance nominalisations, which are categorised as problem constructions, tend to be shorter than the verbal constructions which are the recommended alternative. Because experimental control is not possible, the study uses statistical control, whereby a number of potentially relevant variables are indexed for all constructions and in-

cluded in a regression model that can show the effect of each variable, most importantly of course Construction Type, while all the other variables are taken into account. This approach has the advantage of making it possible to use naturalistic texts, and additionally allows us to investigate a range of different (control) variables or predictors, some of which may be of independent interest.

The control predictors fall into three different categories: characteristics of the items, context variables, and characteristics of the participants. The characteristics of the items include the most important control predictor, which is each target construction's Length in Characters; this is very influential because there are considerable length differences between the constructions, which range between 3 and 119 characters in length (mean 27 characters). Another potentially influential item characteristic is the Mean Word Frequency of the words in each target construction, which is relevant because more frequent words are usually read faster than less frequent ones.

Another frequency-based predictor, which is best characterised as a context predictor, is the Mean Conditional Word Trigram Probability of the words in the target construction, which is used to index the predictability of the words in the AOI in their context (for details, see Balling 2012, forthcoming; MacDonald/Shillcock 2003). For each target word in an AOI, this measure is the frequency of the word trigram (i. e. three words) of which the target word is the last, divided by the frequency of the two words that precede the target word. This indexes how predictable the target is given the two words that precede it. Both frequency-based measures were based on *Korpus90/2000*, a large corpus of written Danish, and all measures were Kneser-Ney smoothed (Chen/Goodman 1998) before being averaged across the words of each AOI.

The other context predictors are AOI Order, the position of the AOI in the experiment (with 1 indexing the first AOI a participant encountered, and 52 the last), the AOI Position inside its text (indexed by the rank in the text of the sentence in which the AOI occurred), and the Position in Line and Position in Sentence of the first word of the AOI. The two former context predictors – position in experiment and in text – may index priming or fatigue across the experimental session or the individual texts (see for instance Balling 2008a). The two latter predictors take into account the fact that words early and late in sentences and lines may show atypical fixation patterns (Frenck-Mestre 2005, Just/Carpenter 1980).

Finally, the participant predictors are the Gender, Group (High School vs. University Students) and Comprehension Question Performance of the participants. All three turned out to be non-significant in the eye-movement analyses and are therefore not further discussed in that connection; Group had an effect in the secondary analysis of reading pace and is discussed in section 3.5.

3.2 Statistical analyses

The results of the experiment were analysed using a regression approach to allow statistical control of the control variables described in the previous section. More specifically, a linear mixed-effects regression (LMER) model was used. In addition to the item, context, and participant predictors described in the previous section, this type of model makes it possible to take into account some of the random variation between participants and items through so-called random intercepts. These random intercepts may for instance model the fact that some participants are slower than others, resulting in a more precise analysis than standard analyses

that only take into account the so-called fixed effects of item, context, and participant predictors. For details on the use of LMER, see Baayen/Davidson/Bates (2008) or, for a less formal description, Balling (2008b).

The statistical model was constructed by first modelling the dependent variable total fixation duration as a function of Length, the predictor with the largest expected effect, and then adding more and more of the control predictors, starting with the most uncontroversial ones and ending with the most interesting ones, before finally adding the central predictor Construction Type. In this way, all available control predictors had been taken into account before the central predictor was tested, allowing us to discern the effect of Construction Type when all other variables are held constant. Predictors were retained in the final model only if they were significant at the 0.05-level, with the exception of the central predictor Construction Type, which is included in the final model to allow the reader to assess its size and (lack of) significance. The p-value for a given predictor relates to the null hypothesis that there is no effect of that predictor on the dependent variable, in this case total fixation duration. If p = 0.05, it means that there is a five-percent chance of observing a larger difference than that in the actual dataset if the null hypothesis is true; if p is 0.05 or below, it is usually taken to indicate that the effect is a significant and reliable one that should be interpreted.

Both the dependent variables (total fixation duration and reading pace) and several of the predictors, including length and frequencies, show the skewed distributions characteristic of response times and lexical statistical measures, with many observations concentrated in the low end of the range and fewer, more spread-out high values. Such skewness can cause problems for the statistical model, because the high values are outliers which may be overly influential. In order to reduce the skewness, these variables were transformed, logarithmically in most cases, but using the less severe square root transformation in the case of the AOI position in sentence. Also in order to improve the fit, data points with large standardised residuals (i. e. differences between the observed data and what the model predicts, which often represent outliers) were removed, in order to avoid that these potential outliers would influence results unduly. This procedure removed 1.6 % of the data points but resulted in a better model fit and more reliable effects.

The final model is summarised in table 3, which shows the name of the predictor in the first column and the estimated effect size of each predictor in the second column. The remaining columns show values based on 10,000 Markov chain Monte Carlo (MCMC) simulations run on the basis of the dataset and the model. Especially for smaller datasets, MCMC-based values provide superior accuracy compared to values based on the t-distribution; the present dataset is not small, but the method is applied nonetheless for consistency with the analysis of reading pace (see section 3.5), which includes fewer data points. The MCMC mean in the second column is the mean estimated effect size in the MCMC-simulations. HPD95 lower and upper are credible intervals within which 95 % of population means are likely to lie; these are similar to standard confidence intervals but they are based on the simulations. Finally, the MCMC-based p-values in the right-most column indicate the significance of each effect.

Table 3: Summary of the linear mixed-effects regression model for total fixation duration. The final model includes those of the control predictors that were significant as well as the central Construction Type *predictor irrespective of its significance. The model also included random intercepts for participant (standard deviation estimated at 0.2332) and item (standard deviation estimated at 0.1964). The residual standard deviation was estimated at 0.3919.*

	Estimate	**MCMC mean**	**HPD95 lower**	**HPD95 upper**	**p**
Intercept	4.3252	4.3239	4.0739	4.5787	0.0001
Construction: Recommended	–0.0182	–0.0184	–0.1004	0.0611	0.6582
Length in Characters (log)	0.8668	0.8666	0.8111	0.9201	0.0001
AOI Order	–0.0038	–0.0039	–0.0056	-0.0022	0.0001
Position in Sentence (squareroot), linear	0.0644	0.0673	–0.0644	0.2008	0.3118
Position in Sentence (squareroot), quadratic	–0.0243	–0.0247	–0.0453	–0.0032	0.0192

For the numerical predictors, e. g. Length, the Estimate represents the slope of the regression line that describes the relation between the dependent variable total fixation duration and the numerical predictor in question, exemplified by the lines in figure 1. For Position in Sentence, the table shows two estimates: one for the linear and one for the quadratic component; when, as here, the quadratic component is significant, the linear term is included, whether or not it is significant. Together, the two estimates describe the effect, which is illustrated in figure 1 and discussed below. For categorical predictors, i. e. for our central factor Construction Type, one level, in this case problem constructions, is represented by the intercept, while the line "Construction: Recommended" describes the effect for recommended constructions relative to problem constructions. In other words, one level of the categorical predictor is not explicitly mentioned but "hidden" in the intercept, while the comparison between the two categories is given in the line that mentions the other level of the categorical predictor.

3.3 Problem and recommended constructions

The difference between recommended and problem constructions is shown in table 3 in the line "Construction: Recommended", with an estimated effect size of 0.0182 log RT units, i. e. recommended constructions are read on average 0.0182 log RT units faster than problem constructions (which are represented by the intercept). When this is adjusted to the medians of the other predictors, it corresponds to a mean advantage of 17 ms for the recommended compared to the problem constructions. In addition to being small, this effect is highly unsystematic and very far from significant with a p-value of 0.6582. This means that the, more or less explicit, claim of writing guides that problem constructions are more difficult to read, cannot be confirmed: There is no evidence that the problem constructions are more difficult to read than the recommended constructions.

It is not unproblematic to draw conclusions from a non-significant result, since what the

statistical model does is test whether it is reasonable to reject the null-hypothesis. In this case, the null hypothesis is that there is no difference between recommended and problem constructions – when, like here, the null hypothesis cannot be rejected, it does not mean that the null hypothesis can be straightforwardly accepted. The result does, however, provide an interesting indication that supposedly problematic constructions such as passives and nominalisations are not necessarily difficult to process, at least not when used in high-quality professional texts like the present ones. The implications of this result are further discussed in the general discussion. Importantly, the result is based on a regression model in which other relevant factors are held constant; the effect was also non-significant when non-significant control variables, which were tested during the analysis process but not included in the final model, were included in the analysis, and it was non-significant in an analysis of the raw data with no control predictors.

One thing that can be done to help interpret a non-significant effect is consider the estimated size of the effect – in this case the difference between recommended and problem constructions, which is 17 ms (the difference between the intercept, which represents problem constructions, and Construction: Recommended, backtransformed from the log scale to ms and adjusted to the median values of the other predictors). For constructions like the present, which had a mean length of 27 characters or 3.5 words, this is a very small effect, which apart from being statistically non-significant must also be characterised as non-significant in practice: An advantage of 17 ms hardly merits changing from a problem to a recommended construction (though other factors may motivate such a shift, see discussion below). Moreover, the effect size is completely unsystematic – which is also what makes it statistically non-significant – with credible intervals (i. e. intervals within which 95 % of effect size means are predicted to lie) ranging from an advantage for problem constructions of 78 ms to an advantage for recommended constructions of 77 ms.

One possible reason for the non-significance of Construction Type is that this factor encompasses a range of different manipulations – genitive, passive, nominalisations etc. – which may show different patterns. For instance, it is not out of the question that a contrast like the one between a nominalisation and its sentential parallel should have bigger effects than the one between an inflectional and a periphrastic genitive. In order to explore this, a number of subanalyses were conducted exploring the differences between recommended and problem constructions for each of the five target construction types that had more than one instance in the texts (i. e. excluding the types PP and Preposed which were only represented by one construction each). The subanalyses showed no significant effect of Construction Type for any of the types Nominalisation, Passive, Complex, Genitive or SV-interference (all p-values in likelihood ratio tests comparing models including the contrast with a simpler model not including it were above 0.4).

3.4 Control variables

As expected, Length in Letters (logarithmically transformed to reduce skewness) had a very large and highly significant effect, which is illustrated in the top left panel of figure 1: Total fixation duration, shown on the vertical axis, naturally became higher for longer constructions, illustrated as log length in letters on the horizontal axis. The other item-related predictor, namely Mean Word Frequency of the words in the AOI turned out to be non-significant and is not included in the model. Similarly, there was no effect of Mean Trigram

Probability. One possible reason for the non-significance of these frequency-based effects is that they are means across constructions that vary considerably in length and whose words vary considerably in frequency, including function words, which are of extremely high frequency, and both high- and low-frequency content words. This large variation may make the mean an uninformative predictor of total fixation duration on the target construction.

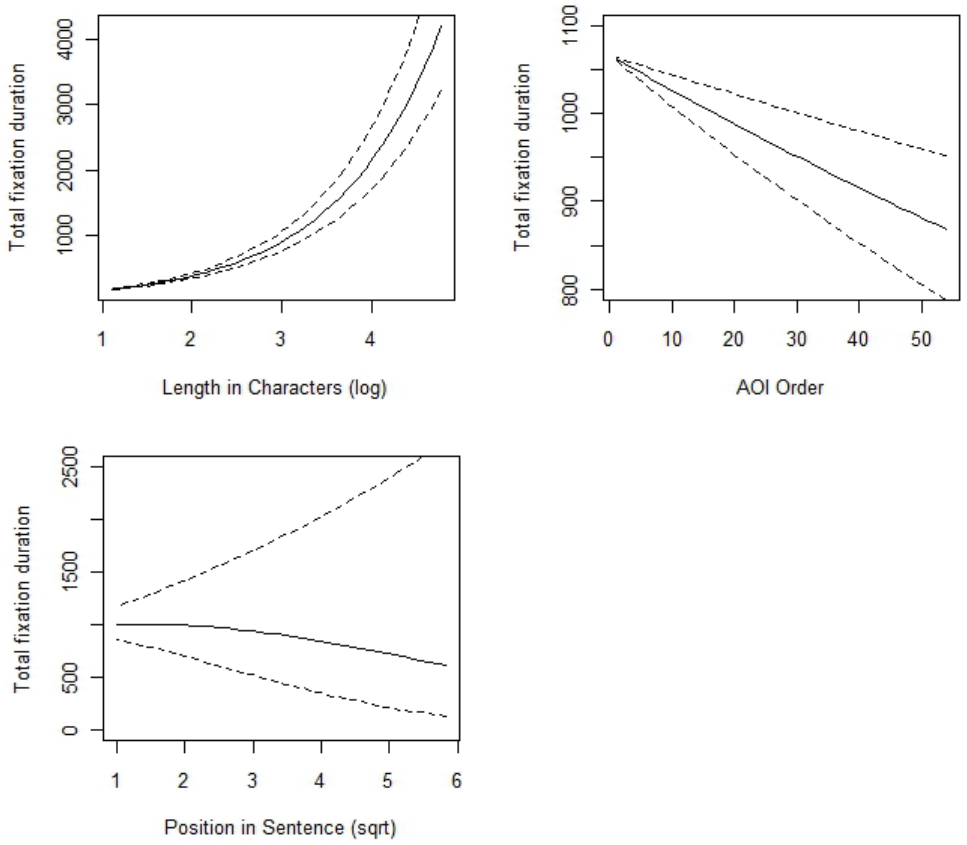

Figure 1: Partial effects for the control predictors Length in Characters, AOI Order and Position in Sentence. The response variable total fixation duration is adjusted to the intercept and the median values for the other predictors, and backtransformed from the log scale to milliseconds for ease of interpretation. Note the different scales on the vertical axis, which is motivated by the much larger effect of length than the other predictors. Solid lines show the estimated effects, dashed lines 95 % credible intervals, i. e. the interval within which 95 % of estimates are predicted to lie.

By contrast, two of the context predictors turned o ut to be significant and are also illustrated in figure 1: The top right panel illustrates the linear effect of AOI Order with shorter total fixation duration for AOIs occurring later in the experiment. This is the smallest of the three effects, but still has a span of around 170 ms. It probably covers two facets of the reading process: Firstly, the fact that reading tends to be slowest in the beginning of a (short) text when the

topic and context of the text need to be established; secondly, the fact that participants tend to become faster as a short experiment progresses. It does not seem to be an issue of the mode of reading changing radically after the first text and the first (relatively easy) comprehension question, since the change is gradual rather than sudden.

The lower left panel shows the effect of the Position in Sentence of the AOI. This non-linear effect exhibits an overall downward trend, indicating shorter reading times for AOIs that do not occur early in the sentence: Once the scene is set by the beginning of a sentence, reading seems to become easier. At first sight, this contrasts with the well-documented sentence wrap-up effect, but that is concerned specifically with words occurring at the very end of sentences and clauses being fixated relatively long (Just/Carpenter 1980, Rayner/Kambe/Duffy 2000, Hirotani/Frazier/Rayner 2006), whereas the effect in this analysis is a graded effect of how early in the sentence a construction occurs. The large credible intervals indicate that this is a somewhat unsystematic effect which should be interpreted cautiously.

3.5 Supplementary analysis of reading pace

As a supplement to the main analysis of the eye-tracking data, reading times for the full sentences could also be analysed for a subset of the constructions. The predictors tested for in the reading-pace model are the same as in the eye-tracking analysis, and relate specifically to the target constructions. This means that the predictors do not capture all variation between the full sentences, which are what the reading pace measures, but using the predictors based on the target constructions still makes sense because what varies between sentences with a single recommended or problem construction are exactly the characteristics of the AOI covering the target construction. The bottom-up approach to the analysis, starting with the least interesting and ending with the most interesting variables, is the same as in the eye-tracking analysis. The analysis is summarised in table 4, which shows the same types of information as table 3 (see the description above). As in table 3, the Estimate represents the slope for numerical predictors like Length, and the difference between the reference level and the contrast level for factors such as Group and Construction Type.

Table 4: Summary of the linear mixed-effects regression model for reading pace. The final model includes those of the control predictors that were significant as well as the central Construction Type predictor irrespective of its significance. The model also included random intercepts for participant (standard deviation estimated at 0.1687) and item (standard deviation estimated at 0.2812). The residual standard deviation was estimated at 0.2003.

	Estimate	**MCMC mean**	**HPD95 lower**	**HPD95 upper**	**p**
Intercept	7.4991	7.5029	7.0706	7.9398	0.0001
Length in characters (log)	0.2282	0.2269	0.1407	0.3111	0.0001
Mean trigram probability	–0.1400	–0.1398	–0.1992	–0.0790	0.0001
Group: CBS	0.2064	0.2071	0.0963	0.3125	0.0010
Construction: Recommended	–0.0022	-0.0026	–0.1381	0.1420	0.9622

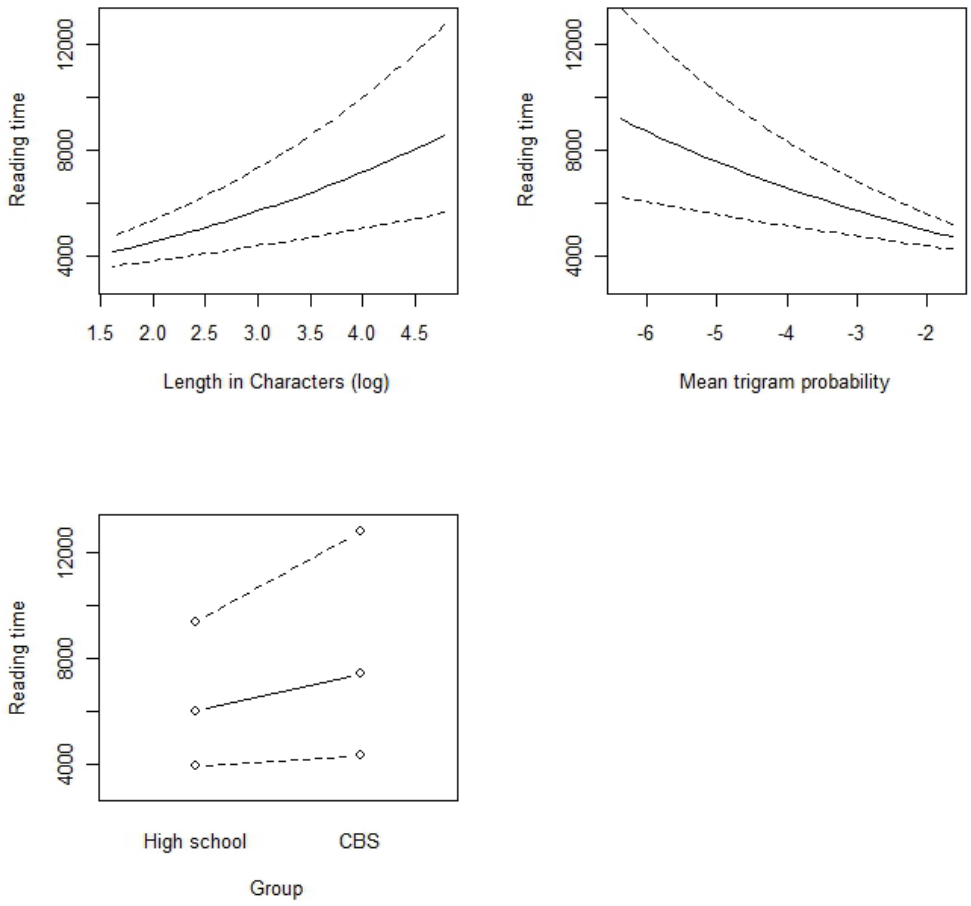

Figure 2: Partial effects for the control predictors Length in Characters, Mean Trigram Probability and Group. The response variable reading pace is adjusted to the intercept and backtransformed from the log scale to milliseconds for ease of interpretation. Solid lines show the estimated effect, dashed lines credible intervals based on the HPD-estimates in table 4.

Exactly as in the eye-tracking analysis, there was absolutely no evidence for an effect of whether a target construction was what writing guides classify as problematic or recommended ($p = 0.9622$). In this analysis, the difference between the recommended and the problem constructions (adjusted to the median values of the numerical predictors length and mean trigram probability and backtransformed from the log scale to ms) was 13 ms in reading of full sentences, i. e. an even more negligible effect than in the eye-tracking analysis. In addition to the effect being small, the credible intervals are again large which means that the effect is very unsystematic, ranging from an advantage for problem constructions of over 1.400 ms to an advantage for recommended constructions of 500 milliseconds. Thus, this analysis confirms the eye-tracking analysis, by showing that the factor Construction Type does not have any detectable spillover effects to other regions of the relevant sentence.

In addition to the non-significant factor Construction Type, the model summarised in table 4 shows significant effects of three control predictors which are shown in figure 2. The effect of Length, shown in the upper left panel, is similar to the eye-tracking analysis, though relatively smaller because it only measures the length of the target construction, not the whole sentence. The effect of Mean Trigram Probability, indexing predictability of the words in the AOI in their context, shows the expected facilitatory effect, with shorter reading times for AOIs containing more predictable words. This is similar to the observations of Balling (2012, forthcoming), but different from the eye-tracking analysis presented above, which showed no significant effect of this variable.

Finally, this analysis – again in contrast to the eye-tracking analysis – showed a small effect of Group. The effect has quite large credible intervals, but is nonetheless significant, with longer reading times for the group of CBS students than for the high school students. Although the CBS students could be assumed to have more reading experience, the especially talented high school students that took part in the experiment are apparently faster readers, a fact that comes out in an analysis of overall reading time, but not in the narrower analysis of fixations time for specific target constructions.

The main difference between the current, secondary analysis of overall reading time and the primary analysis of fixations is that the latter focuses on the specific constructions of interest. Moreover, the fixation time analysis is less likely to include whatever non-reading gaze activity may occur during the experiment. As such, that analysis remains primary. It is, however, useful to corroborate the results in a secondary analysis which would detect effects of the recommended vs. problem construction manipulation that was not narrowly tied to the target construction AOI.

4 General discussion

The eye-tracking experiment showed no reading time benefit, as indicated by total fixation duration on target constructions and reading time for the sentences in which they were embedded, for those constructions that writing guides recommend, compared to supposed problem constructions like passives and nominalisations. Although neither reading time measure says anything direct about actual text comprehension, this null result is nonetheless telling: There is a broad consensus that longer fixation durations and longer reading times are indicative of higher cognitive load in general, for instance in the eye-mind hypothesis of Just/Carpenter (1980) and specifically for the processing of larger chunks of information for instance in Balling/Hvelplund/Sjørup (forthcoming; reading of source text constructions during translation), Rayner et al. (2006; global text difficulty), Birch/Rayner (1997; processing of elements in linguistic focus), and Cook/Myers (2004; resolution of discourse roles). The eye-mind hypothesis assumes that there is always a direct connection between what is gazed at and what is processed; recently, there has been some debate as to whether this always holds completely (Kliegl/Nuthmann/Engbert 2006, Rayner et al. 2007), but there is certainly some correlation between the two. If such a processing difference is not found, it indicates that the problem constructions are not in fact problematic for comprehension. Although the result is specific to Danish, the generalisability of the recommended/problem distinction of the Danish target constructions to English suggests that this holds more generally.

It is of course not inconceivable that there are comprehension difficulties for problem constructions that do not result in longer reading times; to investigate comprehensibility on

its own, we would need a study that measures the actual comprehension of a large number of problem constructions compared to their recommended parallel constructions, probably with rather extreme manipulations in order to see an effect on comprehension. Another possibility would be to consider recall of recommended as opposed to target constructions (e. g. Spyridakis/Isakson 1998), but precise recall may not be the most relevant parameter for comprehension.

The two-choice comprehension questions that participants were required to answer after each text do not provide in-depth information on participants' comprehension and were therefore not analysed as a measure of comprehension. Instead, the questions had the function of ensuring that participants did not read too superficially; this was also supported by instructions presenting the task as reading for comprehension with the goal of being able to recall general contents and word choice. This is one possible choice of format which ensures some level of text comprehension, without encouraging slow, detail-oriented reading. Slower reading could be encouraged by using more difficult comprehension questions, possibly with more answer options, or a series of comprehension questions for each text. Such slower reading could on one hand have resulted in a larger effect of construction type because the differences between constructions would be enlarged as a result of slower reading; on the other hand, it is also conceivable that problem constructions pose fewer problems when reading is slower. This is an interesting question which the current study cannot answer; instead, it is left as an issue for future research. What this study aimed at was a mode of reading that is representative for a lot of the reading that we do in our daily lives, and that constitutes an intermediate type between slow, in-depth reading as one extreme and completely superficial skimming as the other.

The fact that the difference between the construction types is as small and unsystematic as it is – 17 ms with large credible intervals – suggests that there are no (measurable) comprehension difficulties associated with problem constructions and that even if there were, changing them to recommended constructions would not have much practical impact on the speed and ease of reading. The implication of this is that simple writing advice like "Avoid passives!" – and the effort put into implementing this in language policies of various institutions and companies – is at best ineffective and at worst harmful, if it means that writers avoid passives (and other supposed problem constructions) which may sometimes be reasonable solutions to a communication problem, and moreover spend time and effort on doing so. This in turn means that a more refined approach is required, namely one in which the choice of construction is based on a thorough understanding of the structure of the text – crucially including the information structure of sentences and paragraphs – and careful consideration of the receivers' basis for understanding the text. Many writing guides do in fact offer such nuanced approaches, but simple statements such as "Avoid passives!" may be what stays with the readers of such guides and language policies (as exemplified by Kjærgaard 2010). Changing this is a larger pedagogical challenge than simply teaching students and other writers to identify and avoid passives, nominalisations and the like, but may in the end result in better texts.

One caveat is in place, namely that the texts used in the experiment are of relatively high quality, especially the high-profiled and highly polished texts from the National Bank of Denmark and the Department of Justice, while the basis for much writing advice may be texts of lower quality and cases where unmotivated passivation and preposing of heavy constituents may in fact hinder comprehension. The reason for nonetheless choosing to use texts where both recommended and problem constructions were comprehensible was that this made it

possible to directly compare the two, to get a picture of the isolated effect of contrasts such as active vs. passive and nominalised vs. verbal constructions.

There are also other factors motivating various pieces of writing advice than plain speed and ease of comprehension. For instance, Veirup (2002) tells us to choose active over passive constructions because this makes for more dynamic and personal language; in accordance with this, a preference for actives over passives in an institution's language policy may be partially motivated by a wish to appear approachable and personal rather than distant and institutional. Nonetheless, comprehensibility must always be an important – if not the most important – factor when considering how to write well, and in that respect the present result questions the validity of several recommendations for good writing. The issue of how readers experience the reading and view the sender is a different but very interesting question which is left open for future research. Jones et al. (2012) suggest that some guidelines, for instance the recommendation to use questions rather than statements in headings, have mixed effects: The use of questions leads to ratings of the sender as more familiar, while the use of statements means that the sender is seen as more reliable. Further research is clearly required to clarify the effects of different guidelines on different parameters of receivers' perception of the sender.

In contrast to the effect of construction type, other predictors do have an effect. Of these the length of the construction is at the same time the least and the most interesting: the least interesting because it is completely obvious that the length of the construction affects how long it takes to read it, but also the most interesting because length may vary between problem constructions and their recommended parallels. The fact that length is significant while construction type is not suggests that the length of candidate constructions should be taken into account in the choice of construction, along with other factors discussed above, e. g. how the type of construction fits the information structure (Björk/Räisänen 1997). The other significant control variables are of less prescriptive interest: the tendency for constructions late in texts and segments to be processed faster does not prescribe a specific way of writing.

Over the last decade or more, many public institutions and agencies have adopted language policies, in Denmark for instance the Danish courts, the Danish tax authority and the Copenhagen Municipality, spending considerable resources on designing the policies and training employees to apply them. In the USA, using plain language has become a legal requirement for federal agencies after the Plain Writing Act of 2010. This involves, among other aspects, following writing advice similar to that investigated in this study, as outlined in the *Federal Plain Language Guidelines* of 2011. Similar initiatives are listed for many different countries on http://www.sprakradet.se/2065 and http://www.plainlanguagenetwork.org/Government/index.html, indicating how widespread the concern with clear writing is.

In Denmark, the spread of language policies has spurred some debate as to the goals of such policies and their implementation (Kjærgaard 2009, 2010, 2011, Søndergaard 2010). Kjærgaard (2009) argues that the success criteria of institutional language policies and writing guides are underspecified but may be deduced to be reductions in the number of supposed problem constructions such as passives and prepositional phrases premodifying nouns. Against this, Søndergaard (2010), who worked on designing the language policy of the Danish courts, argues, following Wille (2001) and Wille/Løj (1985), that it is not the quantity but the quality, i. e. appropriateness, of passive constructions that is at stake. Such a consideration cannot be quantified, but needs to be investigated in an analysis of readers' attitudes to the text and the sender. This more nuanced approach may not always be the central message in writing guides (Kjærgaard 2010), but it is in clear accordance with the present study, which shows that

passives and other supposed problem constructions are not inherently problematic to readers. Thus, the answer to the question posed in the title of this article – does good writing mean good reading? – is, on the level of specific constructions, negative: Following or opposing writing advice about certain syntactic constructions does not seem to have an isolated effect. What matters to the speed and ease of comprehension is probably not the structure of a particular construction, but whether that structure fits the message, which – on a more abstract, not construction-specific level – means that good writing, of course, does make for good reading.

5 Appendix

The original texts used in the experiment. Target constructions are in italics and square brackets, the different construction types are marked as subscripts using the codes from table 1.

Text 1: The vision statement of the Danish Department of Justice
(retrieved from http://www.justitsministeriet.dk/visioner.html on October 13, 2011)

Justitsministeriets vision er at være den institution, som [*i den centrale statslige forvaltning*]$_{SV}$ [*forestår vurderingen af*]$_{NOMINAL}$ væsentlige eller principielle retsspørgsmål og varetager retssektorens anliggender, og som med henblik [*herpå*]$_{COMPLEX}$ besidder stor juridisk kompetence.

Med henblik [*herpå*]$_{COMPLEX}$ er Justitsministeriets overordnede målsætninger følgende:

[*At understøtte*]$_{NOM}$ den demokratiske beslutningsproces

Justitsministeriet er en ministerstyret organisation, der skal stå til rådighed for den demokratiske proces i alle dens faser. Det bør [*sikres*]$_{PASSIVE}$, at der skabes et præcist og overskueligt beslutningsgrundlag for ministeren, regering og Folketing, og at der så vidt muligt gives et overblik over den politiske [*handlefrihed*]$_{COMPLEX}$ i forhold til de retlige grænser samt over konsekvenserne af forskellige beslutninger.

Der skal være en høj grad af troværdighed og saglig kvalitet i alle ministeriets aktiviteter, og ministeriet skal herunder [*ved at yde bistand og rådgivning til andre ministerier*]$_{SV}$ arbejde for generelt at styrke *[lovgivningens kvalitet*]$_{GENITIVE}$. Justitsministeriet skal endvidere [*gennem rettidig igangsættelse*]$_{NOMINAL}$ af udvalgs-, udrednings- og lovforberedende arbejde skabe grundlaget for, at ministeriet [*på sine lovområder*]$_{SV}$ til stadighed er med til at præge udviklingen såvel nationalt som internationalt.

Ministeriet skal i den forbindelse samtidig være med til at styrke den forskningsmæssige indsats. Oplysning om forskningsresultater skal være let tilgængelig, og nye relevante forskningsprojekter skal [*igangsættes*]$_{COMPLEX}$, således at der bl.a. skabes dokumentation for [*lovgivningens effekt*]$_{GENITIVE}$ og for behov for nye lovgivningsinitiativer.

[*At værne om og udvikle*]$_{NOMINAL}$ faglige kompetencer

Justitsministeriet skal [*gennem synliggørelse af*]$_{NOMINAL}$ [*ministeriets arbejde og ved en faglig, åben og direkte dialog med samarbejdsparterne og det omgivende juridiske miljø*]$_{SV}$ skabe forståelse og interesse for [*vigtigheden*]$_{NOM}$ af juridisk sagkundskab.

Ved at skabe en udfordrende og attraktiv arbejdsplads skal ministeriet [*sikre rekruttering, udvikling og fastholdelse af*]$_{NOMINAL}$ medarbejdere med stor professionel kompetence. Gennem faglig dygtighed og engagement skal ministeriet være med til at udvikle og værne om grundlæggende juridiske kompetencer.

Justitsministeriet skal have en sikker juridisk håndtering af komplicerede retsspørgsmål, herunder [*sikre vedligeholdelse*]$_{\text{NOMINAL}}$ af et vidensberedskab på Justitsministeriets juridiske kerneområder. Justitsministeriet lægger endvidere vægt på, [*at andre faglige kompetencer - herunder administrative kompetencer - udvikles og understøttes*]$_{\text{PASSIVE}}$.

Text 2: Conditions for insurance against work-related injuries at Lærerstandens Brandforsikring (retrieved from https://www.lb.dk/betingelser/arbejdsskadeforsikring.pdf on October 13, 2011)

Forsikringstagerens oplysningspligt

Det påhviler forsikringstageren ved [*forsikringens tegning*]$_{\text{GENITIVE}}$ og senere at oplyse om og på forlangende at dokumentere samtlige de forhold, som selskabet skønner nødvendige til [*bedømmelse af*]$_{\text{NOMINAL}}$ selskabets risiko og til [*fastsættelse af*]$_{\text{NOMINAL}}$ præmie.

Forsikringstageren er forpligtet til at [*give selskabet meddelelse*]$_{\text{NOMINAL}}$, såfremt der [*efter forsikringens tegning*]$_{\text{SV}}$ [*indtræder forandringer i*]$_{\text{NOMINAL}}$ arten eller omfanget af risikoen. Skønner selskabet det nødvendigt, er forsikringstageren ligeledes forpligtet til at give selskabet adgang til at kontrollere [*de af forsikringstageren afgivne*]$_{\text{PP}}$

oplysninger, herunder at undersøge forholdene på de arbejdssteder forsikringen omfatter. *[text omitted]*

[***Præmiens beregning***]$_{\text{GENITIVE}}$

[*Ved hvert forsikringsårs begyndelse*]$_{\text{NOMINAL}}$ [*fastsættes*]$_{\text{PASSIVE}}$ en foreløbig præmie på grundlag af det forventede antal beskæftigede/enheder i forsikringsåret. [*Ved hvert forsikringsårs afslutning*]$_{\text{NOMINAL}}$ [*fastsættes*]$_{\text{PASSIVE}}$ en endelig præmie på grundlag af det endelige antal beskæftigede/enheder i forsikringsåret. Såvel den foreløbige som den endelige præmie [*beregnes*]$_{\text{PASSIVE}}$ på grundlag af selskabets tarif ved forsikringsårets begyndelse.

Uanset bestemmelsen i stk. 3 er selskabet [*ved ændring af ydelserne efter lov om sikring mod følger af arbejdsskade samt de hertil hørende foretagne hensættelser*]$_{\text{SV}}$ berettiget til uden varsel at ændre præmien.

Text 3: E-mail on a change of examination rules at Copenhagen Business School

Vedhæftet [*videresendes*]$_{\text{PASSIVE}}$ efter aftale med Studielederen og Studienævnet uddannelsesdekanens brev om [*harmonisering*]$_{\text{NOMINAL}}$ af normalsidedefinitionen på de erhvervssproglige uddannelser med den norm som i øvrigt gælder på CBS.

Som det fremgår er en normalside [*også på de erhvervssproglige uddannelser*]$_{\text{SV}}$ nu defineret som 2275 satsenheder.

Bestemmelsen [*er i princippet gældende*]$_{\text{COMPLEX}}$ fra 1. september 2011 (selv om brevet er dateret senere) – i praksis fra og med den [*førstkommende*]$_{\text{COMPLEX}}$ eksamenstermin.

Under hensyn til de varslede ændringer har Studienævnet allerede inden ferien besluttet ikke at ændre sideantallet for opgavebesvarelser fastsat i den nugældende (09-) studieordning, men fastholde det som et maksimum-sideantal i kursuskataloget, som I fik til høring i sidste halvdel af juli.

Denne beslutning [*blev truffet*]$_{\text{PASSIVE}}$, fordi Studienævnet [*er vidende*]$_{\text{COMPLEX}}$ om at der er mange studerende som godt kan bruge lidt mere tekst til [*opgavebesvarelserne*]$_{\text{NOMINAL}}$.

Text 4: Leaflet describing the duties of the National Bank of Denmark (retrieved from http://www.nationalbanken.dk/DNDK/Publikationer.nsf/side/Nationalbankens_opgaver/$file/brochure_nationalbankens_opgaver_web.pdf 26/10/11 on October 13, 2011)

Det er vigtigt for en centralbank, at der er tillid til [*dens økonomiske soliditet*]$_{\text{NOMINAL}}$. Hensyn til bankens egen indtjening må ikke [*lægge en begrænsning*]$_{\text{NOMINAL}}$ for udøvelsen af penge og valutapolitikken. Egenkapitalen bør derfor være betydelig set i forhold til bankens balance og aktiviteter, og der bør løbende ske en vis konsolidering

Møntningsgevinsten

Møntningsgevinst kaldes den indtjening, som [*opnås*]$_{\text{PASSIVE}}$ gennem Nationalbankens [*udstedelse*]$_{\text{NOMINAL}}$ af sedler og mønter. Når Nationalbanken udleverer kontanter, svarer det til, at Nationalbanken optager et rentefrit lån. [*Værdien af lånet*]$_{\text{GENITIVE}}$ kan Nationalbanken placere i aktiver, der giver renteindtægt. [*Efter fradrag af omkostninger til produktion og distribution af sedler og mønter*]$_{\text{PREPOSED}}$ er der tale om en betydelig indtægtskilde for Nationalbanken.

[Text omitted]

[***Fordelingen af overskuddet***]$_{\text{GENITIVE}}$

[*Fordelingen af overskuddet*]$_{\text{GENITIVE}}$ tages der hvert år stilling til i forbindelse med [*aflæggelse af regnskabet*]$_{\text{NOMINAL}}$. Siden 2002 har staten modtaget 80 pct. af årets resultat ekskl. kursreguleringer. Dermed kommer Nationalbankens indtægter i sidste ende hele samfundet til gode. De resterende 20 pct. [*overføres*]$_{\text{PASSIVE}}$ til sikringsfonden, der er en del af Nationalbankens egenkapital. Sikringsfonden har til formål at bevare Nationalbankens finansielle styrke. •

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