Profiles of Self-perceived Competencies and Conceptions of Academic Writing in University Students

Perfiles de Competencias y Concepciones sobre la Escritura Académica en Estudiantes Universitarios

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In recent decades, students' beliefs about writing have received the attention of many researchers, not least as they play an important role in students' writing performance (Mateos & Solé, 2012; Villalón & Mateos, 2009). The different ways in which students conceive of writing and how these relate both to the strategies they use when tackling writing tasks and to the resulting written products is a topic that has been investigated from different approaches such as phenomenography (Campbell, Smith, & Brooker, 1998; Ellis, Taylor, & Drury, 2006; Lavelle & Bushrow, 2007; Lavelle & Guarino, 2003; Lavelle & Zuercher, 2001; Levin & Wagner, 2006) and recently implicit models (Mateos et al., 2011, Miras, Solé, & Castells, 2013; White & Bruning, 2005). The view is that writing beliefs act as filters that lead students to represent the task to themselves, to establish an implicit or explicit goal, and to approach it, in a particular way. Although the way in which students' conceptions are characterized varies from one study to another, the conclusion from this research is that the different conceptions can be reduced to two more global ones: one that is more superficial and reproductive, the other deeper and more constructive.

The research findings from the phenomenographic approach (Lavelle & Guarino, 2003), show that the more constructive conceptions tend to be associated with more elaborate written products, whereas the more reproductive conceptions are associated with less elaborate products. Moreover, in all the studies, finding

students with constructive conceptions has been less common than finding students with reproductive ones.

Whereas the phenomenographic approaches deal only with the explicit aspects of representations, on the implicit models perspective conceptions constitute models understood as sets of tacit, but systematic, epistemological beliefs that underlie and restrict both, the way we approach and the way we interpret writing situations. This is the perspective adopted by White and Bruning (2005). They distinguish two implicit models of writing: transmissional and transactional. These different ways of conceiving of and approaching writing are related to differences in the written products. Their work shows that the texts written by students with low transmissional and high transactional beliefs were the ones that obtained the best scores.

The results of some research carried out by the present authors with secondary and university students (Mateos, et al., 2011; Miras, Solé & Castells,2013; Villalón, Mateos & Cuevas, 2013) point in the same direction. These studies examined the relationship between transmissional and transactional reading and writing beliefs and the quality of a written synthesis of multiple texts. It was found that students with more transactional beliefs integrated and organised the information obtained from the different sources better. Employing a similar approach, Villalón and Mateos (2009) studied secondary school and university students' conceptions of about writing using a new questionnaire. This instrument, devised by the authors, explores both the beliefs students possess about writing, and the actual practice they say they engage in as writers, as these are regarded as possible complementary avenues for accessing students' conceptions about writing. Underlying students' reported beliefs and practices, as reflected in their answers to the questionnaire, there are two ways of conceiving of academic writing, one reproductive, and the other epistemic. The results of this study indicate that, although university students displayed a more sophisticated and complex conception of writing than secondary school students, neither group attained a fully epistemic conception. In summary, the research reviewed here supports the idea that the way students approach writing and the quality of their written products are related to the conceptions they hold about writing.

Writing self-efficacy beliefs have also been found to be an important predictor variable in writing performance (García & Salvador, 2006; Klassen, 2002; Pajares,

2003). The idea here is that confidence in their own competence as writers will help students engaged in a writing task to generate greater interest and to deal more appropriately with the obstacles that arise while performing it.

In our view, both writing conceptions and writing self-efficacy beliefs play a role in writing performance and influence its quality. Thus, in order to carry out a complex writing task a student would need not only to hold a sophisticated view of writing but also to perceive him or herself as being competent to enact the complex processes that such a conception demands. If a student holds a naïve writing conception or lacks self-confidence with regard to performing the task, he/she will not produce a high-quality written product.

We believe there is a need to look at the possible mutual influence of writing conceptions and the more motivational aspects of writing such as writing self-efficacy beliefs. Some studies that have examined this issue do point to a relationship between writing conceptions, self-efficacy beliefs and writing performance (Villalón, Mateos, & Cuevas, 2013; White & Bruning, 2005). In White and Bruning's (2005) study, efficacy for writing was used to identify possible motivational correlates of implicit beliefs about writing. It was assessed by asking students about their confidence in performing a variety of writing-related tasks. They found a significant correlation between transactional beliefs and writing efficacy, but not between transmissional beliefs and writing efficacy. The study by Villalón, Mateos and Cuevas (2013) investigated the conceptions about writing and writing self-efficacy beliefs held by high school students and their associations with writing achievement. Results revealed that writing self-efficacy beliefs play an important role in predicting writing performance and that writing performance is moderated by students' writing conceptions.

Despite some studies have looked at the relationship between writing conceptions and self-efficacy beliefs and their associations with writing performance, they have studied these relationships considering the conceptions separately. Our research aims at identifying multidimensional configurations of writing conceptions and self-efficacy beliefs which, to our knowledge has not yet been explored, and their relationship to several students' variables, deepening in this field of study.

Objectives

Within this context the present study had several goals. The first was to characterize the conceptions of academic writing and self-perceived writing competencies held by Spanish undergraduate students. Results from these two scales considered separately have already been presented by Castelló and Mateos (see this monograph), who also have established comparisons with teachers' beliefs. However, drawing on the proximity between students' writing conceptions and self-perceived writing competencies, a significant step in understanding the structure of the belief system of individuals was to look into the existence of a possible multidimensional configuration on both types of beliefs. The second aim was to examine the extent to which the degree of sophistication shown by the profiles of writing conceptions and self-perceived competencies was related to various characteristics of the students, such as their level of experience in the university context, the subject area in which they were studying or their gender. The third objective was to determine whether the degree of sophistication shown by the profiles explained part of the variation in writing performance, specifically, in the writing processes that students refer to having carried out and the characteristics they attribute to the writing process.

Although we expected that students with more sophisticated profiles would be found in later academic years, as well as in those subject areas in which language plays a more important role (e.g. social sciences and language courses), we did not rule out the possibility that more sophisticated profiles might also be encountered elsewhere, since the fact that students are at university means that they are likely to have reached a good level of writing skills and a high perceived level of competency.

We also expected that students with more sophisticated profiles would have a more sophisticated perspective not only of the writing process as a whole but also in terms of the importance they attribute to the characteristics of the writing process.

Method

Participants

Participants were 1027[1] undergraduates (204 male, 823 female) from nine Spanish universities. Their studies involved one or more of the following academic branches: arts and humanities (n = 30); social sciences and law (n = 696); health sciences (n = 277); and engineering and architecture (n = 25). In terms of their university experience, 429 students were in years one or two of their course, 451 were in years three or four, and 147 had been at university for five or more years (see Castelló and Mateos, in this monograph for more information about the sample characteristics). Table 1 provides a summary of these data.

Table 1

Distribution of participants by academic branch and year, and by gender

Academic branch and year	N (maximum)	Males	Females
Arts and Humanities			
Years 1-2	15	4	11
Years 3-4	12	3	9
Year 5 or above	3	1	2
Social Sciences and Law			
Years 1-2	306	52	254
Years 3-4	303	59	244
Year 5 or above	87	20	67
Health Sciences			
Years 1-2	105	19	85
Years 3-4	120	20	100

[1] Despite the complete sample were 1044 participants, 17 students did not respond to the items of the scales used in this study. For this reason they have been excluded from the analyses, and the final sample characteristics are presented here again.

Year 5 or above	52	9	43
Engineering and Architecture			
Years 1-2	4	3	1
Years 3-4	16	11	5
Year 5 or above	5	3	2
TOTAL	1027	204	823

Instrument

Data were obtained through the European Student Writing Survey (ESWS), a questionnaire developed under the aegis of the European Research Network on Learning to Write Effectively (COST Action IS0703). The purpose of this survey is to explore the writing practices of university students in different countries. As it has been explained by Castelló and Mateos (see this monograph), 10 different scales were identified from the questionnaire.

In order to meet the objectives of the present study, different scales were used for different purposes. Of particular relevance to the identification of student profiles was the information provided by four subscales. On the one hand, we have two subscales that form part of the *Mastery of academic writing competencies* scale (subscales reliability is explained in Castelló and Mateos in this monograph), namely 1) 'Perceived competency in relation to the writing process' (e.g. solving problems during the writing process; planning the process) and 2) 'Perceived competency in the use of discursive elements' (e.g. writing elegantly and with good style; precision of expression). On the other hand we have two subscales that form part of the *Conceptions/values/beliefs about academic writing* scale, namely 1) 'Conceptions about the importance of discursive writing resources in one's own field of study' (e.g. importance of elegant language; terminological accuracy) and 2) 'Conceptions about the importance of content' (e.g. importance of content in the field of study; possibility of being creative or critical).

The profiles that emerged from this process were then examined in relation to the results obtained from the *Writing process* subscales: 1) 'Process-oriented writing' (12 items: e.g. I always make a plan before writing a text; I set aside a considerable amount of time for revising my text; I ask somebody else to go through my text so as to improve it); and 2) Importance attributed to the 'Characteristics of the process' (6 items: e.g. brainstorming, planning, reading, producing an initial draft and revision, among other aspects, are important in my writing) (some of the items included in these to last subscales are presented in López, Marin and Roca de Larios, this monograph).

Procedure

The online version of the ESWS was used to gather data from the students, who had previously been sent a letter/e-mail asking them to participate. That letter/e-mail also set out the aims of the study and the procedure for responding to the survey instrument (for more details in the procedure, see Castelló and Mateos this monograph).

The students' responses to the questionnaire were introduced into a database which was then used to perform the pertinent statistical analyses (Castelló & Mateos, this monograph).

The variables considered in the present study relate to two aspects. On the one hand, the characteristics of the sample: years of university experience (three levels: years 1-2; years 3-4; and year 5 or above); gender (male/female); and area of study (four levels: arts and humanities; social sciences and law; health sciences; engineering and architecture). And on the other hand, various scales and their respective subscales that have been mentioned in the Instruments section above: Mastery of academic writing competencies; Conceptions/values/beliefs about academic writing; The writing process.

Results

Profiles of self-perceived competencies and conceptions of academic writing

In order to identify possible multidimensional profiles based on students' responses to the scales regarding self-perceived writing competencies (scale: Mastery

of academic writing competencies) and their conceptions about the value or importance of academic writing in their field of study (scale: Conceptions/values/beliefs about academic writing), we conducted a correlational analysis of the data obtained from the four subscales (see Table 2).

Table 2

Means, standard deviations and Pearson bilateral correlations among self-perceived competencies and conceptions of academic writing

Measure	*M*	*SD*	2	3	4
1. Perceived competency in relation to the writing process	3.60	.62	.78**	.29**	.28**
2. Perceived competency in the use of discursive elements	3.61	.61	-	.26**	.29**
3. Conceptions about the importance of using discursive resources	3.66	.59	-	-	.63**
4. Conceptions about the importance of content	4.09	.60	-	-	-

Note. The maximum value for each scale was 5 in a Likert scale in which: 1= strongly disagree; 5= strongly agree

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

It can be seen that all the dimensions were positively and significantly correlated with one another, although the correlation is stronger between the subscales that make up each of the scales considered in order to establish student profiles.

To identify these profiles we conducted a k-means cluster analysis, with various means being used to determine the appropriate cluster solution. First, potential cluster solutions were examined to ascertain whether the clusters differed with regard to various dimensions of the self-perceived competencies and conceptions of academic writing. The results for the cluster analysis were confirmed using the cross-validation method (Everitt, Landau, & Leese, 2001). We randomly split the sample into two

groups of 513 and 514 cases each, and then analysed the two data samples separately so as to compare the cluster solutions and determine whether the emergent clusters were consistent across the samples. This procedure identified a two-cluster solution (for the two samples as well as for the full data set) as being the most adequate (see Figure 1). Finally, once cluster membership for the two subsets had been identified, the initial cluster variable was used to predict group membership. A valid solution is indicated by a high percentage of correct classifications. Cohen's kappa coefficient provides a measure of the percentage of correct classifications over and above chance. The kappa index in this case was .97, which supports the validity and consistency of the classification used for the analyses.

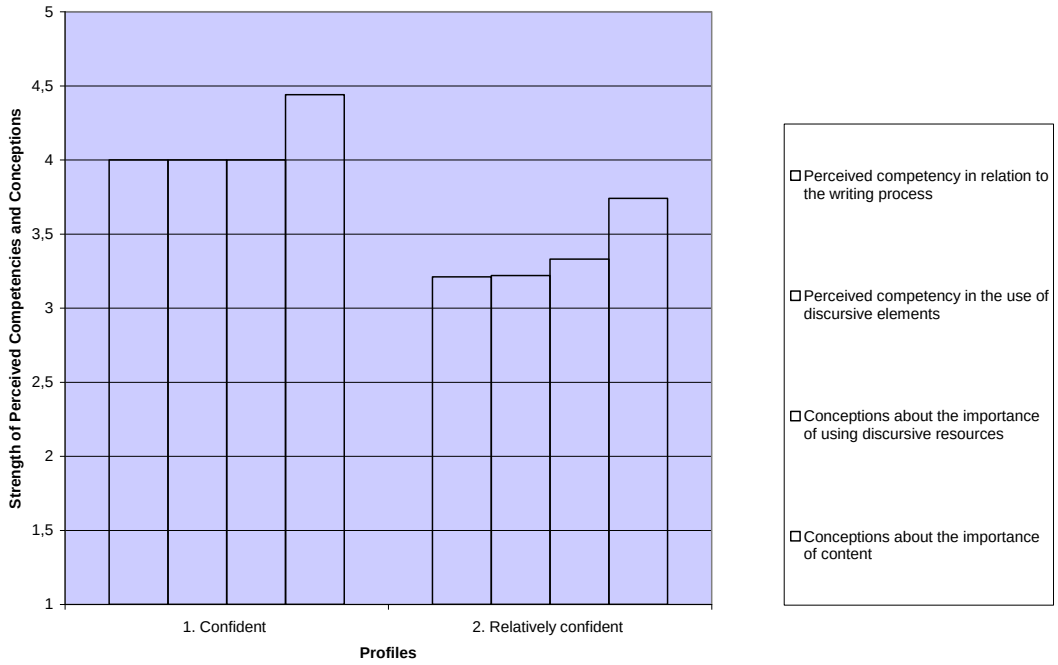

Figure 1. Self-perceived competencies and conceptions about academic writing in two student profiles.

As can be seen in Figure 1, the cluster analysis of 1027 participants shows that the students' self-perceived competencies and conceptions about academic writing can be grouped into two profiles. In absolute terms, both profiles indicate high levels of self-perceived competency and a high degree of importance attributed to academic writing in the students' field of study. This is demonstrated by the fact that the results

for these profiles are above or only slightly below the mean of the sample (see Table 2 for the mean and standard deviation). In relative terms, however, the first profile (on the left of the figure) corresponds to students who are confident about their writing competencies and who acknowledge the importance of writing in their field of study (*n* = 519), whereas the second profile (on the right) corresponds to those students who feel relatively confident about their writing competencies and who consider writing to be relatively important in their subject area (*n* = 508).

In order to test for statistical differences between the clusters with respect to students' self-perceived competencies and conceptions of academic writing we conducted four analyses of variance (ANOVAs) with cluster membership as the independent variable and scores on the different scales as the dependent variables. These ANOVAs provide information about how the two clusters differ with respect to the four different belief factors (see the mean and the standard deviation for the factors in Table 3). The Brown-Forsythe statistic was applied in those comparisons in which we could not assume the equality of variances. The two clusters were significantly different with respect to the different conceptions and self-perceived competencies considered for the analysis. Thus, the *Perceived competency in relation to the writing process* contributed significantly [*Brown-Forsythe* (1, 999.56) = 685.43, $p < .001$]; the *Perceived competency in the use of discursive elements* also contributed significantly and with a medium effect size [$F(1,1025) = 704.31$, $p < .001$, $\eta^2 = .40$]; similarly did the *Conceptions about the importance of using discursive resources* [$F(1,1025) = 472.59$, $p < .001$, $\eta^2 = .31$] ; and the *Conceptions about the importance of content* [*Brown-Forsythe* (1, 921.53) = 502.77, $p < .001$]. Therefore, it can be assumed that all the variables included in the analysis are useful in terms of their contribution to the classification of cases.

Table 3

Means and standard deviations for the two profiles and the self-perceived competencies and conceptions of academic writing.

	Cluster 1	*Cluster 2*

Construct	Max.	*M*	*SD*	*M*	*SD*
1.Competencies: process	5	4.00	.45	3.20	.51
2. Competencies: discursive elements	5	3.99	.02	3.22	.02
3. Conceptions: discursive resources	5	3.99	.02	3.33	.02
4. Conceptions: content	5	4.43	.02	3.74	.02

Cluster differences with respect to sample characteristics

One of our objectives was to examine whether there was a relationship between the observed student profiles and certain sample characteristics, namely the number of years of university experience, the area of study and their genre. This aspect was tested by applying a chi-squared analysis to the profiles and each of these variables.

The results showed no significant differences in either case. Specifically, the comparison for the two student profiles (confident and relatively confident) yielded a non-significant chi-squared value with respect to years of university experience [χ^2 (2, N = 1027) = .39, p = .83], the area of study [χ^2 (3, N = 1027) = 1.95, p = .58] and their gender [χ^2 (1, N = 1027) = 1.40, p = .23]. This indicates that these profiles are independent of years of experience, area of study, and gender, and that neither profile is especially prevalent in a given academic field or year group (i.e. students in later or earlier years of their course).

Cluster differences with respect to other scales

In order to examine the possibility of cluster differences with respect to different aspects assessed by the questionnaire (i.e. the writing process and the importance attributed to the characteristics of this process), we conducted univariate analyses of variance (ANOVAs).

The results for the ***Process-oriented writing*** variable (i.e. what the students report doing when they write) suggest that the profiles are relevant to some extent (see Figure 2), although the effect size is very low [F(1,1025) =82.46, MSE = 21.55, p <

.001, η^2= .074]. Specifically, students with the first profile (those who feel more confident about their competence and think that writing is important in their field of studies) are more likely to make a plan before writing, to read through the material beforehand, and to revise or ask someone else to revise their work than are students with the second profile (those who perceive themselves to be relatively confident and think writing is relatively important in their field of studies).

As for the variable ***Characteristics of the writing process*** (i.e. the importance that students attribute to aspects such as producing a draft, brainstorming, planning, reading through and revising the text), the results again show that the profiles make a small contribution [*Brown-Forsythe* (1, 985.90) = 66.94, $p < .001$] (see Figure 2). Specifically, students with the first profile (perception of greater confidence in their competence and perception of writing as being important in their field of knowledge) appear to ascribe greater importance to these characteristics of the writing process when producing their texts than do students with the second profile (those who see themselves as less confident and who also see writing as being relatively important in their studies).

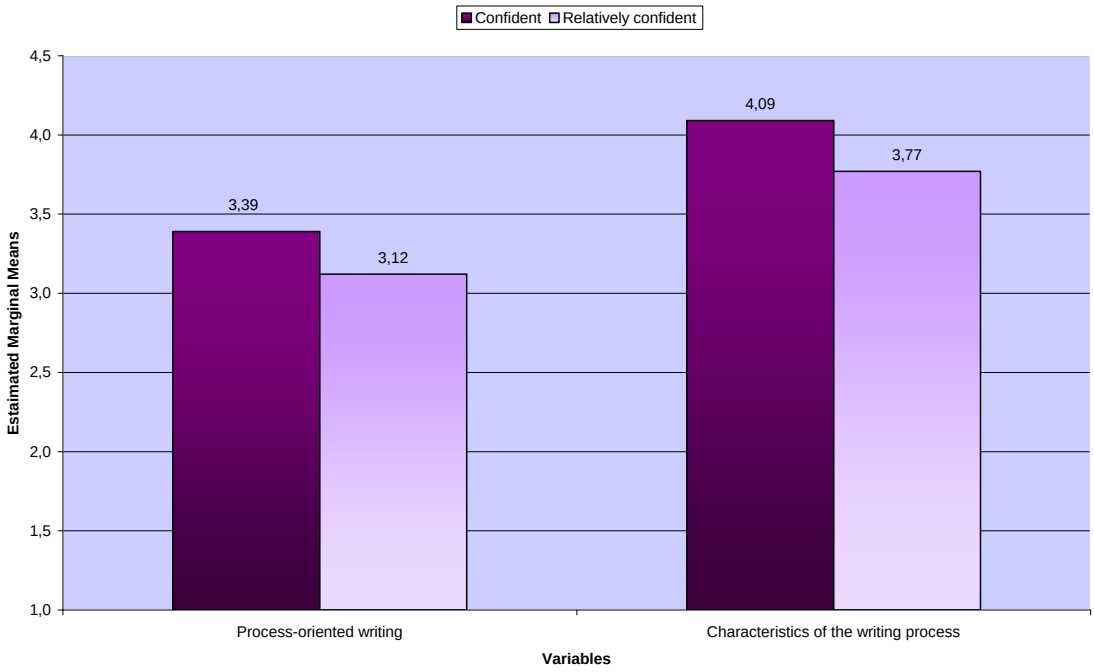

Figure 2. Estimated marginal means for each of the student profiles and for each of the variables studied (writing process and characteristics of this process).

Conclusions

In terms of the first objective, this study shows that it is possible to identify different profiles regarding students' self-perceived competency as writers and their conceptions about writing as an activity. These results find support in the already well-established idea of the inter-relation between writing beliefs and self-efficacy beliefs (Villalón, Mateos, & Cuevas, 2013; White & Bruning, 2005). A student who holds a sophisticated view of writing also tends to perceive him or herself as being competent. Beyond the relationship between certain conceptions or beliefs, already evidenced by other investigations, our study – which supports these findings – enables us to identify students with coherent conception profiles. As might be expected given that our participants were all undergraduates the sample as a whole scored relatively high in self-perceived competency and in the importance attributed to writing in the respective academic fields. These results are in line with the results pointed out by other previous studies (Villalón & Mateos, 2009). Nevertheless, two distinct profiles emerged from the analysis: one concerned students who were confident about their ability as writers and who attributed considerable importance to writing, while the other set of students were less confident about their writing skills and ascribed less importance to writing as an activity.

With regard to our second objective the results suggest that these two profiles are independent of the students' area of study, the number of years of university experience and students' gender. In other words, neither profile was especially prevalent in a given academic field or among particular year groups (i.e. students in later or earlier years of their course).

In terms of the third objective the results indicate that the profiles do have a certain influence on participants' responses to the questionnaire scales that deal with the characteristics of the writing process. Specifically, we found that students with higher levels of self-perceived competency are more likely to report greater involvement in more complex aspects of the writing process than are those students who regard themselves as only relatively competent as writers. Similarly, the students who feel more competent tend to attribute greater importance to the characteristics of this process in accordance with what is required by academic writing. These results

are coherent with other research that has studied the role of writing conceptions and self-efficacy beliefs on writing performance (Villalón, Mateos, & Cuevas, 2013; White & Bruning, 2005). However, the very low effect size means that the contribution of the profiles, although present, is minimal. This result as well as the lack of relation between the profiles and several of the characteristics of the sample, could be due to the characteristics of the two sets of students defined by the profiles, which are not highly differentiated, and this aspect could in turn be related to sample limitations. The fact that some of the subject area sub-samples contained a small number of students could have had an influence in terms of fewer profiles being identified or poor differentiation between those that were. It is likely that a sample comprising a more balanced distribution of students from across different subject areas would yield different or more distinct profiles, which in turn would increase the size of any associated effect. For instance, Jehng, Johnson and Anderson (1993), studying epistemic beliefs found that students from History and Physics held different beliefs about the certainty of knowledge. It could be possible, therefore, that students also hold different beliefs depending on the degree they are studying.

A further limitation concerns the fact that the results of this study are based on what participants *reported* doing rather than what they actually did, and this means that extreme caution should be exercised when interpreting the findings or drawing any conclusions. Thus, we cannot conclude that each of the two profiles is necessarily associated with different *behaviour* in practice. In this regard, further studies are needed to examine the actual written products of students with different profiles. Only thus will it be possible to confirm that what students say they do is consistent with what they actually do when engaged in a real writing task.

From the point of view of the educational implications, the identification of students with similar profiles in relevant factors may help to understand their approximation to academic writing, as well as thinking about interventions which take into account the inter-relation between both types of conceptions, and which favour those which are more beneficial towards writing. Our study begs the consideration of the benefit of encouraging students to reflect on the complex nature of academic writing they are required to manage as well as their self-perceived competency in academic writing. Beyond current determinants, specific ways of perceiving writing

and self-perceiving as writers underlie writing processes. Although insufficient, both conditions may contribute to the success of academic writing in line with the demands of higher levels of education.

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