

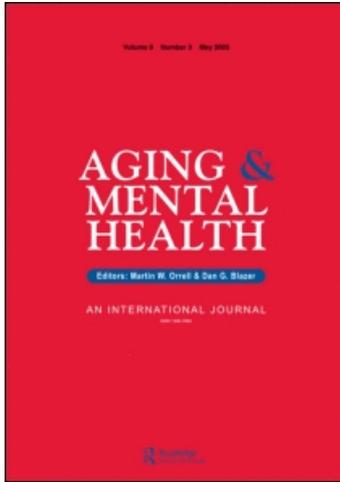
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### Actions taken to cope with depressed mood: The role of personality traits

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ORIGINAL ARTICLE

## Actions taken to cope with depressed mood: The role of personality traits

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### Abstract

It is still largely unknown which actions people take to improve their mood when they feel they are getting depressed. Using the five-factor model of personality, we explore coping actions in a population of older adults in residential homes in relation to personality traits. A total of 350 non-cognitively impaired inhabitants of residential homes in the Netherlands participated in this study (mean age 85 years). They indicated which of 22 actions to cope with depression they had used in the past three months, and which of these they considered to be helpful in reducing depression. Other measures included the NEO-FFI, CES-D and MINI. Almost 60% of all subjects had used one or more actions to reduce depression in the past three months, and almost 90% considered one or more actions to be helpful in reducing depression. People scoring high on neuroticism had used more coping actions, including relaxing, eating chocolate, praying, seeking professional help, engaging in more pleasant activities, and talking to friends and relatives. People scoring high on openness considered many of the actions to be helpful. We conclude that actions taken to cope with depression and their helpfulness differ considerably for subjects with differing personality traits.

### Introduction

It is still largely unknown what people do when they feel they are getting depressed, which actions they take to reduce their depression, and how successful these actions are (Gross & John, 2003; Jorm, Griffiths, Christensen, Parslow, & Rogers, 2004; Thayer, Newman, & McCain, 1994). It is also not very well understood who seeks professional help and who does not, given the comparable severity of the problems (Ten Have, de Graaf, Vollebergh, & Beekman, 2004). Although it seems plausible that a person with a depressive disorder might seek help when personal actions to cope with the depression fail, this has not been empirically confirmed.

Although little research has focused on these questions, they are, however, important for several reasons. First, about 30 to 50 percent of persons with depressive disorders do not seek professional help (Bebbington et al., 2000; Bijl & Ravelli, 2000; Kessler et al., 2001), and this figure is even higher in elderly with depressive disorders (Gottlieb, 1994; Zivian, Gekoski, Knox, & Larsen, 1994). More understanding about who seeks help, in what phase of the process, and for which reasons, could help to improve access to mental health services.

Second, there is some empirical evidence that certain actions people can take reduce depression

significantly. For example, there are several studies showing that reading self-help books (Cuijpers, 1997; Den Boer, Wiersma, & Van den Bosch, 2004), using St. John's wort (Linde, Berner, Egger, & Mulrow, 2005; Vermani, Milosevic, Smith, & Katzman, 2005), and taking exercise (Lawlor & Hopker, 2001) may be effective in reducing mild to moderate depression. Furthermore, behavioral approaches in the treatment of depression have shown that a systematic increase in pleasant events may reduce depression significantly (Zeiss, Lewinsohn, & Munoz, 1979). It may be possible to give subjects with early depressive symptoms certain lifestyle advice based on these actions, which significantly reduce depressive symptoms or may lower the risk of developing major depressive disorders at an early stage.

Third, from an etiological point of view, the actions people take to cope with depression may be related to the course and prognosis of their depressive symptoms, and may therefore shed more light on the process through which a depressive disorder develops.

Recently, an important study on actions taken to cope with depression was conducted in a population survey (Jorm et al., 2004). In this study, a postal

survey was carried out, in which a checklist of actions taken to cope with depression in the previous six months, and a self-rating depression questionnaire was sent to almost 7,000 adults in Australia. It was found that self-help strategies are commonly used, that the specific type of self-help strategy depended on the severity of the depressive symptomatology, and professional help-seeking peaked in severe distress.

In the present study, we want to further explore these coping actions in two ways. First, we examine coping actions in a population of older adults in residential homes. Inhabitants of residential homes have been found to have high levels of depressive symptoms in several studies (Eisses et al., 2004; Weyerer, Hafner, Mann, Ames, & Graham, 1995), and it could be hypothesized that they use many coping strategies to reduce depression. Second, we examine whether actions taken to cope with depression are related to personality traits. It can be assumed that subjects with specific personality traits are more inclined to use specific coping actions. For example, people who are more extrovert may well be more inclined to talk about their problems than other people. Likewise, people who are more open to new experiences could be assumed to be more inclined to use new or alternative treatment methods.

In this study, we use the five-factor model of personality, which is increasingly recognized as a comprehensive, robust and parsimonious model of normal personality traits (Bienvenue et al., 2001; Goldberg, 1993; John, 1989; Trull & Sher, 1994) and has strong external empirical support (Bienvenue et al., 2001; Costa & McCrae, 1992). The five factors are: neuroticism (a tendency to experience negative emotions and cope poorly); extraversion (quantity and intensity of interpersonal interactions and positive emotions); openness to experience (appreciation of experience for its own sake); agreeableness (orientation toward others, altruistic vs. antagonistic); and conscientiousness (organization, motivation, and persistence in achieving goals).

## Method

### *Subjects and procedure*

The Boards of Directors of nine residential homes for the elderly in Amsterdam and in the surrounding area were approached in the second half of 2004 for participation in this study and all agreed to participate. All residents of the homes received a letter in which they were notified of the study. Within two weeks they were approached by masters-level clinical psychology students and asked whether they wanted to participate in the study. If they wished to participate, they were asked for informed consent. Then they were interviewed. Each interview lasted about one and a half hours.

Cognitively impaired elderly people were excluded from the study. The elderly residents who had a diagnosis of dementia and were cognitively impaired were not asked for participation (selection was conducted by the staff of the residential home). The remaining 782 inhabitants were requested to participate in the study, of which 371 (47.4%) agreed to participate. A total of 411 subjects did not participate for varying reasons: too ill to participate ( $N=109$ ; 11%); deafness ( $N=23$ ; 2%); 232 subjects refused participation without a clear reason (24%); 47 could not be contacted (5%); and for three subjects the questionnaires were not filled in properly. The remaining 368 respondents were interviewed using the Mini Mental State Examination (MMSE), an instrument to measure cognitive functioning (Folstein, Folstein, & McHugh, 1975). The 18 subjects who scored below the cut-off score of 17 were excluded from the study. This procedure resulted in 350 respondents.

Most residents were women (71.7%) and unmarried (81.1%). Selected characteristics are presented in Table I.

### *Measures*

*Actions to cope with depression* were assessed with an adapted version of the questionnaire developed by Jorm et al. (2004). We explained to the respondents that everybody feels depressed now and then, and that many people take specific action to alleviate this depressed mood. Then we asked them to indicate which of 22 actions they had taken in the past three months to cope with feelings of depression (yes/no). These 22 actions are presented in Table II. The 22 items were selected from the 46 items on the original questionnaire of Jorm et al. (2004). We did not include the different types of psychological treatment for depression (such as interpersonal psychotherapy, cognitive-behavioral therapy, counseling), as we did not expect the respondents to know the difference

Table I. Selected characteristics of inhabitants of 350 residential homes in the Netherlands.

	N	%
Female gender	251	71.7
No children	53	15.1
Religious	162	46.3
Lower education	173	49.4
Married	66	18.9
Chronic illnesses		
0	34	9.7
1-3	183	52.6
≥4	131	37.6
Age	M = 84.7	SD = 6.2
Major depression (current)	15	4.3
Major depression (lifetime)	37	10.6
CES-D	M = 10.5	SD = 8.8
CES-D ≥ 16	81	23.2

Table II. Actions taken to cope with depression: frequencies ( $N=350$ ).

Actions	Actual behaviour		Considered helpful	
	<i>N</i>	%	<i>N</i>	%
More pleasant activities	97	25.9	228	65.3
Talk with friends/relatives	84	22.4	169	48.4
Relax more	67	17.9	182	52.1
Move more	61	17.4	176	50.6
Pray more	48	12.8	96	27.5
Professional help	33	8.8	227	64.9
Antidepressants	18	5.1	159	45.4
GP	18	5.1	145	41.4
Mental health services	10	2.9	145	41.4
Eat chocolate	25	6.7	54	15.4
Vitamins	15	4.0	50	14.3
Drink more/less alcohol	13	3.7	82	23.5
Less coffee	12	3.2	28	8.0
Homeopathy	8	2.1	30	8.6
Self-help book	6	1.6	45	12.9
Less sugar	6	1.6	15	4.3
Acupuncture	2	0.6	38	10.9
Diet	2	0.6	18	5.1
Ginseng	1	0.3	19	5.4
Aromatherapy	0	0	9	2.6
Hypnotherapy	0	0	24	6.9
St. John's Wort	0	0	22	6.3
At least one	205	58.6	304	86.9

between them. Nor did we not ask about very specific alternative treatments (such as phenylalanine or selenium). We did ask whether they had taken other actions to cope with depression which were not mentioned in the list.

Apart from the question whether they had taken these actions in the past three months, we also asked whether they thought each action was helpful in reducing depression (yes, no, don't know).

*Personality characteristics* were assessed, as indicated earlier, with the NEO-FFI Personality Inventory (Costa & McCrae, 1992), Dutch version (Hoekstra, Ormel, & De Fruyt, 1996). The NEO-FFI results in a profile of the personality of the subject and consists of 60 statements about the personality. For each statement the respondent should indicate on a five-point scale how much this is applicable to him or herself. The scores for each of the five scales are re-coded into nine categories, with a normal distribution, indicating the relative score of an individual compared to the general population.

*Depressive symptomatology* was measured with the Dutch version of the Center for Epidemiological Studies Depression scale (CES-D), a 20-item self-report questionnaire on depressive symptomatology experienced during the past week (Bouma, Ranchor, Sanderman, & Van Sonderen, 1995; Radloff, 1977). The psychometric properties of the Dutch version of the CES-D are good in older adults (Crohnbach's alphas ranging from 0.80–0.90; Beekman, Limbeek, van Deeg, Wouters, & Van Tilburg, 1994), and because of the absence of physical symptoms of

depression the questionnaire is considered very suitable for the elderly (Beekman, et al., 1994; Lewinsohn, Seeley, Roberts, & Allen, 1997; Radloff & Teri, 1986). A cut-off score of 16 is usually used to indicate the presence of clinically relevant depressive symptoms.

*Major depressive disorder.* The Mini-International Neuropsychiatric Interview (M.I.N.I.) (Sheehan, et al., 1998) was used to assess the presence of Major Depressive Disorder ([MDD], current and lifetime), according to DSM-IV criteria. In this study the Dutch translation of the clinician-rated (CR) version of the M.I.N.I. (Overbeek, Schruers, & Griez, 1999) was used. Validation research found good to very good kappa values when the M.I.N.I.-CR was compared to the Structured Clinical Interview DSM-III-R-patient version (SCID-P) and the Composite International Diagnostic Interview for ICD-10 (CIDI; Sheehan, et al., 1998). In the present study, the interviews were conducted by the masters-level clinical psychology students who conducted the interview with the respondents. The students underwent training in using the MINI-interview by an experienced clinical psychologist.

*Demographic variables* assessed included: age, gender, educational level (lower vs. higher), being religious (as indicated by the respondent in one question: yes/no), being married: yes/no, and number of chronic illnesses. Chronic illnesses were measured using a list of the 25 most common chronic diseases (Central Bureau of Statistics, 1989).

### Analyses

We first examined how many subjects had used each of the 22 coping actions and how many subjects thought each coping action was helpful in reducing feelings of depression. Then we examined in univariate analyses whether the coping actions were related to demographic variables. We conducted a series of logistic regression analyses, with each of the coping actions as the dependent variable, and each of the demographic variables as predictors. In each regression analysis, only one variable was used as predictor. We used a  $p$ -level of 0.1, because these analyses were conducted to find variables we had to control for in the main analyses (see below). We also examined in univariate analyses whether the coping actions were related to the total CES-D score, current major depressive disorder, and lifetime depressive disorder. In these logistic regression analyses, the coping actions were the dependent variable, while each of the depression variables (CES-D, current major depression, lifetime major depression) were separately entered as predictors ( $p < 0.1$ ).

The next step was to examine the relationship between coping actions and the NEO-FFI scales. We examined this in three ways.

First, we conducted a series of logistic regression analyses with each of the coping actions as the dependent variables and the five NEO-FFI scales as predictors (unadjusted analyses).

In the second series of logistic regression analyses, the coping actions were also used as dependent variables, but this time we not only entered the NEO-FFI scales as predictors, but also the CES-D total score, in order to control for depression. We also conducted separate analyses in which the dummy variables indicating the presence of major depression (current and lifetime) were entered into the model instead of the CES-D score. However, because these analyses resulted in virtually the same outcomes, we only present the analyses with the CES-D score as predictor.

The third series of logistic regression analyses was the same as the second series, except that in these analyses all demographic variables that were found to be significantly related to the coping actions in the univariate analyses were also entered as predictors. Once more we conducted separate analyses with the CES-D score and with the dummy variables indicating the presence of major depression (current and lifetime), but again the outcomes were virtually the same and we present only the results for the analyses with the CES-D.

The relationship between coping actions and the NEO-FFI was examined separately for coping actions that were actually used in the past three months (yes/no), and the helpfulness of the coping actions (regarded as helpful vs. not helpful/do not know).

We examined only those coping actions which were used or regarded as helpful by at least 25 subjects.

Because the number of analyses was high, we only report significant results when they reach the  $p < 0.01$  level (except for the analyses in which the relation between demographics and coping actions were examined, because these variables were used as predictors in the adjusted main analyses).

## Results

### *Actions taken to cope with depression and actions considered to be helpful*

Almost 60% of all subjects had used one or more actions to reduce depressive symptoms in the past three months, and almost 90% considered one or more actions to be helpful in reducing depression (Table II). Engaging in more pleasant activities had been used most as an action to reduce depression (25.9%) and was considered to be the most helpful (65.3%). Other actions that had been taken to cope with depression were talking with relatives and friends

(22.4%), relaxing more (17.9%) and moving more (17.4%). Other actions considered to be most helpful were relaxation (52.1%), more movement (50.6%) and talking with relatives and friends (48.4%). About 9% of the subjects had sought professional help, while about 65% considered at least one type of professional help to be helpful.

### *Actions taken to cope with depression and personality characteristics*

As can be seen from Table III, several demographic variables were related to actions taken to cope with depression at the  $p < 0.1$  level, but only a few reached significance levels of  $p < 0.01$ . Women are more inclined than men to increase the number of pleasant activities (OR = 2.26), and as could be expected, people who are religious pray more often to improve their mood than non-religious people (OR = 8.76), which probably explains why they more often indicate that they use at least one of the coping actions (OR = 2.00). Praying is also significantly related to having children or not (OR = 0.32).

The CES-D score is significantly related to seeking professional help (OR = 1.09), to eating chocolate to improve mood (OR = 1.05), and to the use of at least one of the coping actions (OR = 1.04). Lifetime major depression is related to the use of at least one coping action (OR = 3.51) and to seeking professional help (OR = 6.95), while current major depression is significantly related to seeking professional help (OR = 11.85).

Several significant relationships ( $p < 0.01$ ) between coping actions and NEO-FFI subscale scores were found. Making use of at least one of the coping actions was significantly related to openness and neuroticism. Furthermore, neuroticism was significantly related to more pleasant activities, talking to friends and relatives, relaxing more, praying and seeking professional help, while eating chocolate was related to openness. Conscientiousness was related to seeking professional help, but only when we corrected for level of depression.

No significant relationship between altruism and any of the coping actions was found, nor any significant relationship between extraversion and coping actions.

The differences between the unadjusted and adjusted relationships between coping actions and NEO-FFI scores were minimal.

### *Actions considered to be helpful and personality characteristics*

Thirteen of the nineteen actions to cope with depression were considered to be helpful by more than 25 subjects. Five of these (more pleasant activities; moving more; seeking help; using more or less alcohol; drinking less coffee; and homeopathy) had no significant relationship with any of the five NEO-FFI scales and are not presented in Table IV.

Table III. The relationship between actions taken to cope with depression in the past three months, and demographics, depression, and NEO-FFI subscales: odds ratios.

Actions	Any	Pleasant activities	Talk	Relax	Pray	Prof. help	Chocolate
Demographic variables							
Female gender	–	2.26**	–	–	–	–	0.94°
Age	–	–	–	0.96°	–	–	–
Having children	–	0.58°	–	–	0.32**	–	0.34°
Married	–	–	–	–	–	–	–
Education	–	–	–	–	–	–	–
Religious	2.00**	1.50°	–	–	8.76***	–	–
Two or more chronic illnesses	–	–	–	0.48*	–	–	–
Depression							
CES-D	1.04**	–	–	–	–	1.09***	1.05**
MDD current	–	–	–	–	–	11.85***	–
MDD lifetime	3.51**	–	–	–	–	6.95***	–
NEO-FFI <sup>1</sup>							
Conscientiousness	Unadjusted	–	–	–	–	–	–
	Adjusted (A)	–	–	–	–	1.38**	–
	Adjusted (B)	–	–	–	–	–	–
Openness	Unadjusted	1.22**	–	–	–	–	1.44**
	Adjusted (A)	1.22**	–	–	–	–	1.46**
	Adjusted (B)	1.23**	–	–	–	–	1.46**
Neuroticism	Unadjusted	1.38***	1.36***	1.30**	–	1.35**	2.08***
	Adjusted (A)	1.42***	1.44***	1.37**	1.39**	1.48**	1.75***
	Adjusted (B)	1.36***	1.46***	1.37**	1.40**	1.33*	1.75***

°*p* < 0.1; \**p* < 0.05; \*\**p* < 0.01; \*\*\**p* < 0.001.

(A) Adjusted for CES-D score; (B) adjusted for CES-D score and significant demographic variables (*p* < 0.1).

<sup>1</sup>No significant relation between altruism and any of the coping actions was found, nor any significant relation between extraversion and coping actions; therefore, altruism and extraversion are not presented in this table.

Again, several demographic variables were found to be related to the helpfulness of actions taken to cope with depression. But only a few reached a *p* < 0.01 level: the relationship between age and relaxing more (OR = 0.95); between praying and religiousness (OR = 4.18); between age and acupuncture (OR = 0.93); and between age and drinking more/less alcohol (OR = 0.95; not reported in Table IV).

The CES-D score was significantly related at the *p* < 0.01 level to relaxing more, acupuncture, moving more (not in Table IV), and homeopathy (not in Table IV).

The NEO-FFI scale openness was significantly related to the helpfulness of talking to friends/relatives, relaxing more, praying, eating chocolate, and acupuncture. This was however not true for both unadjusted and adjusted models (except for eating chocolate; Table IV). Neuroticism was only related to the helpfulness of any coping actions, and to talking with friends/relatives. Extraversion was related to the helpfulness of talking to friends/relatives. Conscientiousness and altruism were not related to the helpfulness of any of the actions (not reported in Table IV).

**Discussion**

We found evidence that actions taken to cope with depression and their helpfulness differ considerably for subjects with differing personality traits.

Most subjects in our study (almost 60%) indicated that they used at least one action to cope with feelings of depression, and the vast majority (more than 80%) indicated that they considered at least one of the actions to be helpful. Especially subjects with high scores on the neuroticism and on the openness scales of the NEO-FFI had taken at least one action to cope with depression, also when controlled for the level of depression and demographic variables. Neurotic people seem to try more actions to cope with a depressed mood, and people scoring high on openness are more inclined to consider actions to cope with depression as helpful.

This study shows that people try to cope with a depressed mood in different ways. It is not known whether these differing patterns of coping are related to whether a depressed mood develops into a major depressive disorder, or whether specific actions or patterns of coping are actually effective in reducing a depressed mood. We need more (prospective) research to examine these questions. It seems important, however, whether coping patterns are related to a positive outcome, as this may result in new preventive and early interventions for depression. Several coping actions, such as exercise, bibliotherapy, and increasing pleasant events, are probably effective in reducing existing depression, but may also be effective in earlier, prodromal phases of depression.

An interesting finding from this study is that seeking professional help not only depends on the severity of the depressive symptomatology,

Table IV. The relationship between perceived helpfulness of actions taken to cope with depression, and demographics, depression, and NEO-FFI subscales: odds ratios.

Actions		Any	Talk	Relax	Pray	Chocolate	Vitamines	Bibliotherapy	Acupuncture
Demographic variables									
Female gender		-	-	-	-	2.55*	0.54°	-	-
Age		-	-	0.95**	-	-	-	-	0.93**
Having children		-	-	-	0.52*	-	-	-	-
Married		0.48*	-	-	-	-	-	-	-
Education		-	-	1.64*	-	2.00*	2.32*	2.15*	2.31*
Religious		-	-	-	4.18***	-	-	-	-
Two or more chronic illnesses		-	-	-	-	-	-	-	-
Depression									
CES-D		-	-	0.97**	-	-	-	-	0.93**
MDD current		-	-	-	-	-	-	-	-
MDD lifetime		-	-	-	-	-	-	-	-
NEO-FFI scales <sup>1</sup>									
Openness	Unadjusted	-	-	1.18**	-	1.35**	-	-	-
	Adjusted (A)	-	1.22**	1.19**	-	1.36**	-	-	1.31**
	Adjusted (B)	-	-	-	1.24**	1.35**	-	-	-
Extraversion	Unadjusted	-	1.21**	-	-	-	-	-	-
	Adjusted (A)	-	-	-	-	-	-	-	-
	Adjusted (B)	-	-	-	-	-	-	-	-
Neuroticisms	Unadjusted	-	-	-	-	-	-	-	-
	Adjusted (A)	-	1.31**	-	-	-	-	-	-
	Adjusted (B)	1.39**	-	-	-	-	-	-	-

° $p < 0.1$ ; \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

<sup>1</sup>No significant relationship between conscientiousness and altruism on the one hand, and any of the coping actions on the other hand was found. Therefore these are not presented in this table.

but is also related to neuroticism and conscientiousness. Whether or not seeking professional help is regarded as helpful, however, was not found to be related to personality characteristics. Which people with mental problems seek help and which do not and for what reasons is not well understood (Ten Have et al., 2004). This study indicates that professional help is regarded as helpful by many people, but that actual help-seeking is determined in part by personal characteristics.

One finding from this study is that a small percentage of our population eats chocolate to reduce depression (6.7%), while more than 15% think that this is helpful. Although there are indications that several properties of chocolate may influence mood, such as the carbohydrate content which has been hypothesized to increase serotonin production (Jorm, Christensen, Griffiths, & Rodgers, 2002), it seems unlikely that chocolate has a strong effect on mood. This can however be seen as an indication that the actions people take to cope with depression are not so much rational choices, but rather irrational attempts to reduce the unpleasant effects of depression.

This study has several limitations. First, the questionnaire asking about actions to cope with depression has not been very well validated and may ask about actions which are not used much, while others which are not asked about are used more. Second, actions taken to cope with depression may be conducted more at a subconscious level with some subjects not being fully aware that they are taking some action to reduce depression. Third, the number

of respondents was relatively small, which made it impossible to examine coping actions which were used by a minority of the subjects. Fourth, the refusal rate was considerable (24%) and we did not have any data on the refusers which allowed to examine differences with participants. Fifth, the number of analyses was high, and although we presented only the results at the  $p < 0.01$  level, the risk of capitalizing on chance remains. Sixth, we examined a specific population (older adults in residential homes) and our results can therefore not be generalized to other populations. And seventh, a considerable part of the population refused or was unable to participate in our study. Because of these limitations we have to interpret our results with caution.

Several research questions remain unanswered. For example, we did find considerable differences between the perceived and the actual use of coping actions. Future research could focus on the question what determines whether actions that are perceived as helpful are actually used to reduce depression and which are not. It is also not clear how much these results are influenced by the fact that we examined inhabitants of residential homes which in the Netherlands are often a last resort when independent living is no longer possible.

However, this study does shed some light on the process of what people do to reduce feelings of depression. It has found indications that this process differs for subjects with differing personality traits. It also shows that it is important to examine which actions are effective in reducing depression and which are not. As indicated earlier, some actions

are probably effective, such as bibliotherapy and St. John's Wort, but for most other actions the effectiveness is not clear. More research is clearly needed and may result in advice on lifestyle or coping actions that can be given to people with depression.

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