Development of Career Beliefs Scale: Establishing Construct and Criterion related Validity for Pakistani Employees

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Career beliefs play a significant role in determining career related outcomes. Therefore, development of an indigenous Career Beliefs Scale was undertaken in this study. In Phase I, the items were generated. Phase II the scale was administered on employees (N=228) for determining Factor Structure of the scale. Principal Component factor analysis revealed two factors labeled as Facilitating Career Beliefs and Career Myths. The alpha coefficients demonstrated high internal consistency (.85 and .78) of subscales of Career Beliefs Scale. Evidence for concurrent validity was established by correlating Career Beliefs Scale with Career Satisfaction Scale (Greenhaus, Parasuraman, & Wormley, 1990) scores. The results showed positive relationship between facilitating career beliefs and career satisfaction while a non-significant relationship between career myths and career satisfaction. Discriminant validity was established by correlating Career Beliefs Scale with Minimarker Personality Inventory (Saucier, 1994). Facilitating Career Beliefs and Career Myths correlated with five factors of personality in theoretically justified direction. Since, analysis provided sufficient psychometric properties of Career Beliefs Scale, hence; it is a reliable and valid measure for assessing career beliefs in indigenous context.

Keywords: career beliefs, facilitating career beliefs, career myths, reliability, validity, Career Beliefs Scale

Career beliefs are assumptions and generalizations an individual holds about the self and the world of work, which affect one's career decision-making and career development (Krumboltz, 1994). Career beliefs are defined as positive and negative thoughts or assumptions people hold about themselves, occupations, and the career development process (Peterson, Sampson, Reardon &Lenz, 1996). People's beliefs about themselves and the world of work influence their approach to learning new skills, developing new interests, setting career goals, making career decisions, and taking action toward career goals (Amundson 1997; Mitchell & Krumboltz 1996). Identifying individuals' career beliefs is important for career goals, career decision making and career related behaviors. Previous literature highlighted the significant role of irrational beliefs in career indecisiveness (Ryan-Jones, 1990; Lunney, 1993; Chi, 1994; Enright, 1996; Luzzo, 1997); whereas some recent researches (i.e., Arulmani, Laar & Easton, 2003; Turner, 2011) focused on exploring dynamics of ineffective career beliefs . Though, measures are available to gauge career beliefs of employees but no indigenous instrument is available to measure career beliefs of Pakistani employees; and research studies examining the occupational values across cultures provide empirical evidences of significant differences among individualist and collectivist cultures (Hardin, Leong, & Osipow, 2001; Leong, 1991; Lowe, 2005). Keeping in view the significance of need for an indigenous scale, the present study has aimed to develop career belief scale for Pakistani employees and to determine its psychometric properties.

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Theoretical Framework

Employing the theoretical framework of social learning theory, Krumboltz (1979) considered the belief system as personal generalizations trying to represent their own reality about self and environment. He emphasized the importance of genetic dispositions, environmental circumstances, learning experiences and task skills for influencing career development by contributing to the development of person's career beliefs system. Krumboltz (1994) stated that beliefs are neither good nor bad. Whether a person's belief is good or bad depends on the person and the situation. If their beliefs are constructive, they will facilitate the achievement of goals. If their beliefs are inaccurate, they can hamper achievement of goals (Krumboltz, 1991).

Focusing on the adult employed population, Mitchell's (1993) found that negative career beliefs hinder career exploration behavior. Liu (2003) provided the evidence that maladaptive career beliefs leads to decision making problems in career and adaptive career beliefs lead to career resilience. Leu (2000) found negative career beliefs as the strongest factor impacting participants' indecision. Neault (2002) found the evidence that positive career beliefs were the best predictors of career success. Atta (2009) highlighted the role of emotional intelligence, self-efficacy and life satisfaction as predictors of career negative thoughts.

For measuring career beliefs there are some instruments available. Krumboltz's Career Beliefs Inventory (CBI) was developed as a counseling tool to explore individuals for their career beliefs and to investigate the possible effect of these beliefs on career related tasks (Krumboltz, 1991). The CBI was criticized because some scales showed low reliability indices (Fuqua & Newman,

1994). CBI does assess the client's values within a familial and community context. However, the lower scores on some items show the likelihood that some troublesome assumptions regarding client's career path maybe lurking behind them and may also be not normative for collectivist perspective (Krumboltz, 1999). Further, Chinese Career Beliefs Inventory (CCBI) has been developed by Yang (as cited in Liu, 2003) for measuring the career beliefs among students. While, Career Beliefs Patterns Scale (CBPS) has been developed for taping different kinds of career beliefs across seven factors including proficiency, persistence and control and self direction beliefs (Arulmani, Laar & Easton, 2004).But both of these measures were designed for student population.

While analyzing the current scenario, it is found that there are instruments available for measuring career beliefs; and CBI (Krumboltz, 1999) is the more frequently used instrument for career counseling, exploring the client beliefs in depth; and it has a sound theoretical background. Hence, as discussed earlier, using entirely western constructs and items, researchers may take the risk of missing some important indigenous non-western cultural insight (Stewart, Bond, Zaman, Chang, Rao& Fielding, 1999). Moreover, Lakshmi (2010), while exploring relationship between career beliefs and acculturation among international students, found low reliabilities of CBI. He took sample from Indian, Chinese and Korea and administered CBI on them and found low reliabilities of CBI on these all three Asian students. Although CBPS developed in India may be more relevant because of cultural relevance, but is not applicable for employed adults. In this scenario, the researcher felt the need to develop an indigenous scale for measuring career beliefs. The study has the objective of developing an indigenous scale for measuring career beliefs and to validate this scale in Pakistani culture.

Method

The present research was conducted in following three phases. Phase I dealt with understanding the indigenous career beliefs phenomenon and generation of item pool. While phase II aimed to explore the factor structure of the newly developed instrument. Phase III further establish the psychometrics of career belief scale on Pakistani employees.

Phase I: *(Exploring indigenous career beliefs and generation of item pool)*

As a first step, efforts were made to understand the construct of career beliefs in depth. Extensive literature review was done to understand the nature of career beliefs. Theoretical paradigms (Mitchell, Jones & Krumboltz, 1979; Bandura, 1986; Lent, Brown & Hackett, 1994) covering this construct, latest researches and available assessment tools (Krumboltz, 1991, Yang as cited in Liu, 2003; Arulmani, Laar & Easton, 2004) were explored in detail.

Focus Group Discussions

Objective

The main objective of conducting focus groups was to gain an indigenous understanding of the construct. Four focus groups were conducted.

Participants

Focus Group 1 comprised eight women (5 married; 3 unmarried; all holding masters' degree employees from Telecom Company. Their work experiences ranged from 4 months to 8 years. . Focus Group 2comprisedeight male employees (7 married, 1 unmarried; holding bachelor to master's degree) from Telecom Company. Their work experiences ranged from 1 year to 15 years. Focus Group 3 included eight women (2 married, 5 unmarried; holding bachelor to masters degree) employees from banking sector. Their work experiences ranged from 1 month to 3 years. Focus Group 4 included nine men (4 married, 5 unmarried; holding bachelor to masters degree) employees from banking sector. Their work experiences ranged from 1 year to 7 years.

Procedure

On the basis of literature review, focus group guideline was developed. This guideline was followed for conducting focus group discussions. Each focus group discussion lasted from forty five minutes to one hour. Only volunteers were taken into sample. The focus group discussions were recorded manually by a helper and were also recorded in audio form. The researcher herself conducted these discussions.

Results

As a result of FGDs and literature review, it was felt that an indigenous instrument in needed to be developed. On the basis of FGD about career beliefs, various themes were analyzed and statements were prepared. The statements showing same themes were merged into one item. Further, some items were added based on existing literature. A total list of 79 items was prepared for further process. The sources for item generation included literature and indigenous information from FGDs. In the next step, the item pool was provided to three subject experts. The committee of three psychologists scrutinized all the items carefully aiming to discard the duplicated ideas and retain the appropriate items. They provided feedback on items and suggested to discard some of the items and to rephrase few items. As a result, 74 items were finalized for CBS. The likert type scoring was decided with five point response format for the scale. There was no reverse scored items in the scale.

Phase II: *Determining Factor Structure of Career Belief Scale*

Phase II focused on exploring factor structure of the newly developed CBS. Further, item-total correlations and alpha coefficients were also calculated as evidences of internal consistency of scale.

Sample

A convenient sample of 350full time working individuals from bank employees, nurses and college teachers of Rawalpindi and Islamabad was taken. The sample included 65% women employees and 35% men employees, 74% were having permanent jobs while 26% employees were working on contract basis and 64% were married and 36% unmarried. 47% of employees were having Masters and above education, 31% had Bachelors degree and 10% had Intermediate degree.

Measure

Career Beliefs Scale (CBS) comprising 74 items developed as a result of phase I was used in this phase. These items were to be scored on Likert type five-point rating scale. Response categories ranged from Strongly Agree to Strongly Disagree. There was no reverse scored item.

Procedure

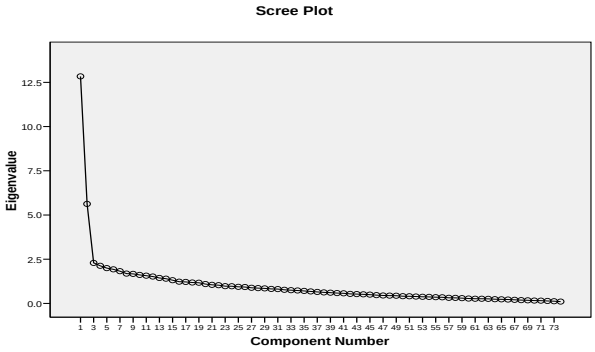
Permission was taken from the head at workplaces from where the data was collected. Only volunteers were included.246 questionnaires (indicating response rate of 70%) were returned. Out of these filled questionnaires, 18 were discarded as they were not filled properly and there were many missing data. As a result finally there were 228 questionnaires with complete information. Respondents provided their written consent and were assured of confidentiality and were requested to provide honest responses. Respondents were given CBS, developed in the first step, to get filled. Some of them returned questionnaires after an hour or so while some respondents returned the questionnaires on the next day. Researcher thanked for their support.

Results

Exploratory Factor Analysis

The newly developed Career Beliefs Scale was subjected to exploratory factor analysis. First of all, data was checked for normality and appropriateness of data for exploratory factor analysis was checked by Kaiser-Meyer-Olkin Measure. KMO value was 0.78 which revealed the good appropriateness of data.

A principal component analysis with varimax rotation was done for this purpose. Varimax rotation was chosen as it is one of the most commonly used types of orthogonal rotation which produce factors that are unrelated. Varimax also maximize the interpretability of the factors (Kahn, 2006). This rotation gave 22 factors with eigen values greater than 1. These factors explained 65.97% of the total variance. But among these factors, only two factors had items greater than five in number. Costello and Osborne (2005) suggested that 5 or more strongly loading items (.50 or above) should be there in a factor for including that factor to be retained. Following this, two factors having more than five items were retained. Scree Plot criteria has also been followed for deciding about the number of factors. Following is the scree plot for the data. The scree plot clearly shows the two factor structure of the instrument.



So, the criteria of scree plot and %of variance explained, two factor structures were decided to be retained.

Table 1

Eigen Values and Percentages of Variances Explained by Two Factor in the Factor Solution obtained through Principal Component Analysis (N=228)

Factors		Eigen Values	Percentage of Variances	Cumulative Percentage
1.	FCB	14.22	19.22	19.22
2.	CM	4.94	6.68	25.91

Note: FCB=Facilitating Career Beliefs, CM= Career Myths

Table 1 is showing the eigen values, percentage of variance and cumulative percentage of the two factors. Overall, the two factors explained 25.91% variance.

Now coming to items retention, it was decided to retain an item which has I) factor loading equal or greater than .40. ii) Do not load on more than one factor above than .40. Following this criteria and trying two factor solutions, the items loaded on these two factors in the following way as shown in the table below.

Table 2
Factor structure of Career Beliefs Questionnaire (N=228)

Item No.	Factor 1	Factor 2	Item No.	Factor 1	Factor 2
48	0.73	-0.07	9	0.46	-0.05
40	0.71	0.04	19	0.46	0.12
70	0.70	-0.17	14	0.44	-0.16
50	0.68	0.03	33	0.44	-0.08
32	0.67	-0.09	44	0.44	0.14
25	0.65	-0.14	49	0.43	0.06
17	0.63	-0.08	27	0.43	0.07
41	0.62	-0.11	58	0.43	0.02
38	0.61	0.02	15	0.42	0.04
46	0.59	0.08	59	0.42	0.18
29	0.56	0.00	61	-0.07	0.63
12	0.55	-0.07	52	0.21	0.60
8	0.55	-0.08	18	-0.06	0.58
74	0.55	0.03	68	-0.23	0.58
51	0.54	-0.10	20	-0.09	0.57
45	0.53	0.07	37	-0.10	0.54
23	0.52	0.08	11	-0.12	0.52
39	0.52	0.04	30	-0.11	0.52
1	0.51	-0.01	67	-0.06	0.49
35	0.51	0.02	64	-0.35	0.49
43	0.51	-0.11	4	-0.07	0.48
56	0.50	-0.06	10	-0.03	0.48
22	0.49	-0.23	71	-0.04	0.43
16	0.49	-0.10	66	-0.01	0.42
42	0.48	0.20	7	0.18	0.41
34	0.48	0.13	69	0.11	0.41

Table 2 gives factor loadings of items of CBQ on two factors. Items having loading equal and above than .40 are shown only. In this way, item number 1,8, 9, 12, 14, 15, 16, 17, 19, 21, 22, 23, 25, 27, 29, 32, 33, 34, 35, 38, 39, 40, 41, 42, 43, 44, 45, 46, 48, 49, 50, 51, 56, 58, 59, 70, 74 loaded in factor I. While item numbers 4, 7, 10, 11, 18, 20, 30, 37, 52, 61, 66, 67, 68, 69, 71 loaded in factor II. From these items, further item numbers 7, 15, 21, 27, 35, 42, 44, 61, 74, 59, and 71 were excluded as they loaded on more than one factor in 25 factor solution. Further, experts recommended the title of Facilitating Career Beliefs and Career Myths for the two factors.

Finally there were 30 items in Facilitating Career Beliefs and 12 items for Career Myths. Higher score on Facilitating Career Beliefs indicated that the respondent possesses more facilitating career beliefs. Higher score on Career Myths showed that the respondent possessed more career myths.

Table 3
Item-total correlation of Career Beliefs subscales (Functional Career Beliefs, Career Myths) with its items (N=228)

Item No.	*Total Score on subscale*	*Item No.*	*Total Score on subscale*
1	.45	45	.52
8	.50	46	.58
9	.45	48	.71
12	.53	49	.41
14	.42	50	.66
16	.41	51	.53
17	.59	56	.47
19	.43	58	.46
21	.40	59	.45
22	.50	70	.68
23	.43	4	.52
25	.60	10	.51
29	.55	11	.54
32	.65	18	.58
33	.45	20	.57
34	.47	30	.56
35	.51	37	.55
38	.56	52	.54
39	.54	66	.42
40	.66	67	.49
41	.61	68	.56
43	.49	69	.42

The above table shows the item-total correlations of the items with their respective total subscales. The correlation coefficients ranged from .42 to .71. This is an evidence of high construct validity of this subscale of Career Beliefs Scale.

Results

Table 4
Correlation between CBS subscales and Minimarker personality factors on employed adults (N=100)

Scales	α	M(SD)	Op	Con	Ext	Agre	Neur	FCB	CM
Op	.62	26.14(4.72)	-	-	-	-	-	.51**	-.20*
Con	.56	27.17(4.63)	-	-	-	-	-	.62**	-.29**
Ext	.58	24.77(4.43)	-	-	-	-	-	.27**	-.36*
Agre	.59	29.48(5.03)	-	-	-	-	-	.71**	-.42**
Neur	.64	23.94(3.33)	-	-	-	-	-	.05	.06
FCB	.90	107.02(18.42)	-	-	-	-	-	-	-
CM	.67	34.88(7.37)	-	-	-	-	-	-	-

Note: Op=Openness to experience, Con = Conscientiousness, Ext=Extraversion, Agree = Agreeableness, Neur = Neuroticism, FCB=Facilitative Career Beliefs, CM=Career Myths, **$p \leq .01$, *$p \leq 0.05$

Phase III: Validation of CBS

In this phase empirical evidences for validation of CBS were determined. Though, Factorial validity has been established in previous phase, subsequently, construct validity including discriminant and convergent evidences was established. Concurrent validity evidence for criterion related validity was also determined in this phase.

Step1: Discriminant and Convergent Validity

Whenever there are high construct inter-correlations, there is a need to assess discriminant validity, in order to have confidence in subsequent research findings (Farrell, 2010). This type of validity evidence is also a form of construct validity. Discriminant validity tests whether concepts or measurements that are supposed to be unrelated are, in fact, unrelated and convergent validity on the other hand, refers to the degree to which two measures of constructs that theoretically should be related are in fact related (Campbell & Fiske, 1959).

For present study, discriminant and convergent validation is determined by correlating scores of CBS with personality traits. Employing the assumptions of Krumboltz (1999) that positive career beliefs are positively correlated with extraversion, agreeableness, openness to experience and conscientious, whereas, negative career beliefs are negatively correlated with openness to experience, agreeableness, extraversion and conscientiousness while dysfunctional career beliefs were positively associated with neuroticism.

Along with 74 items CBS, Minimarker Personality Inventory (Saucier, 1994) with 40 items comprising five personality traits was used for assessing big five factors of personality i.e., agreeableness, openness to experience, extraversion, conscientiousness and neuroticism

The above table shows the relationship between CBS subscales and big five factors of personality. FCB is positively related with openness to experience, conscientiousness, extraversion and agreeableness and has non-significant relationship with neuroticism. On the other hand, CM is showing negative relationship with extraversion and openness to experience, agreeableness, conscientiousness and non-significant relation with neuroticism. These relationships are justified theoretically and provide an evidence of discriminant and concurrent validity.

Step 2: Concurrent Validity

Concurrent validity is a form of criterion related validity which provides the ease of collecting data on the main variable and the selected criterion simultaneously. It refers how an instrument predicts the selected criteria (Anastasi, 1988). It was explored how scores on Facilitating Career Beliefs and Career Myths are related with the criteria of career satisfaction among employed adults. There are empirical evidences (Krumboltz, 1999) that positive career beliefs were positively related with work satisfaction and negative career beliefs were negatively related with work satisfaction.

For the very purpose Career Satisfaction questionnaire (Greenhaus ,Parasuraman, & Wormley, 1990) comprised 5 items were used along with CBS. The correlation coefficients between the scores of CBS and Career Satisfaction Scale were obtained.

Results

Table 5

Cronbach's alpha coefficients, mean, standard deviation, and correlation coefficients among Career Beliefs subscales and Career Satisfaction (N=228)

Scales	α	M(SD)	FCB	CM	CS
FCB	.85	109.58(12.68)	-	-.01	.31**
CM	.78	36.55(8.56)	-	-	-.10
CS	.84	17.29(5.35)	-	-	-

Note: FCB=Facilitating Career Beliefs, CM=Career Myths, CS= Career Satisfaction,**$p \leq .01$

The above table is indicating the concurrent validity of CBS. There is a significant positive relationship between facilitating career beliefs and career satisfaction. While small negative but non-significant relationship is indicated between career satisfaction and career myths. The table is also showing alpha coefficients of FCB and CM i.e. .85 and .78. These values indicate strong reliability indices.

Discussion

Existing literature has well supported that identifying individuals' career beliefs is important because having irrational assumptions can obstruct advancement toward career goals, thus leading to dissatisfaction. Similarly, facilitative career beliefs play positive role in career related behavior and experiences (Arulmani, Laar & Easton, 2003; Turner, 2011). The present study aimed developing an indigenous scale for measuring career beliefs. As discussed earlier that cross cultural differences may play significant differences in developing one's career beliefs (Hardin, Leong, & Osipow , 2001; Leong, 1991; Lowe, 2005) and existing measures are designed for western population and showed low reliabilities on Asian Culture samples (Lakshmi, 2010). For the very purpose, first of all, literature review and focus group discussions were held for understanding this phenomenon in our specific culture. The finalized 74 items were evaluated through experts for face validity. Afterwards, the developed items were tested for psychometric properties. This whole procedure resulted in the development and validation of Career Beliefs Scale (CBS).

As it is well established that to explore the factor structure of any new construct Principal Component Factor

Analysis with Verimax rotation provides the simplest interpretations of the factors (Lorenzo-Seva, 2003).The findings of Principal Component Factor analysis revealed two factor solution for the employees of Pakistani organizations. Based on Krumboltz's (1999) assumptions about career beliefs, these subscales were labeled as Facilitating Career Beliefs and Career Myths. Facilitating Career Beliefs including themes regarding beliefs about hard work, persistence, intrinsic satisfaction from work, attempt to find fit between person and job and taking personal responsibility in occupational selection. While Career Myths included themes of having beliefs about gender stereotypical division of careers, unequal status of different occupations and considering work as the most central part of life. Higher scores on Facilitating Career Beliefs indicated having more facilitating career beliefs while high scores on career myths assumed to show as having more career myths. Pearson product correlation between Career Myths and Facilitating Career Beliefs was found non-significant. On the basis of this, it was decided to interpret the scores on the two subscales separately.

After determining factor structure, Cronbach's alpha coefficient was calculated for estimating the reliability of two scales of CBS. Nunnally and Bernstein (1994), argued that alpha coefficients should be applied to all new measurement constructs because it provides a good estimate of reliability. The findings show pretty satisfactory values (i.e., .85 for Facilitating Career Beliefs and .78 for Career Myths). To strengthen our assumption of internal consistency, item total correlations were also computed and all the items were found positively correlated with the total score of both the subscales of CBS. The coefficients ranging from .40 to .71 for Facilitating Career Beliefs and from .50 to .58 for Career Myths. These findings are indicators of strong construct validity of the two subscales of CBS.

Though, factor analysis depicts sufficient construct validation of any measure, to verify the findings, further, discriminant and convergent validity was also established. A substantial amount of attention has been paid in the past 25 years to the issue of construct validation in the behavioral and organizational sciences. Construct validation is important because establishing the substantive validity of a construct before examining its construct validity may lead to the accumulation of knowledge that later must be discarded (Schwab as cited in MacKenzie, Podsakoff & Jarvis, 2005). For present study, it was decided to correlate the scores on CBS with scores on personality inventory. The same procedure has been followed by Krumboltz (1999) for validating Career Beliefs Inventory. Career beliefs and personality are treated as independent constructs. Our findings indicate some significant positive relationship among personality dimensions and career beliefs components. Definitely CBS is not a personality inventory but these findings make sense conceptually. Openness to experience, conscientiousness, extraversion and agreeableness has found to be positively related with facilitating career beliefs. Employees having high levels of conscientiousness, agreeableness, extraversion and openness to experience tended to believe in hard work, persistence, maintaining balance in work and personal lives, equal status of professions and also try to find jobs according to their interests. While being high on extraversion, conscientiousness, openness to experience and agreeableness is negatively related with possessing career myths. It indicates that employees preferring social group participation, cheerful, seeks excitement and altruistic by nature possess less career myths. Such employees do not possess gender stereotypical classification of occupations and do not take career as the central part of their lives.

CBS was correlated with career satisfaction among employed adults for determining its concurrent validity. It was assumed that as facilitating career beliefs increased, career satisfaction will be increased. On the other hand, as career myths increases, career satisfaction decreases. The results of this study supported this assumption for facilitating career beliefs. This is indication that having facilitating career beliefs is important for career satisfaction but not career myths. Krumboltz (1999) also found that employed people who were more satisfied with their work believed in hard work and more open in employment decisions.

Over all the results provides the evidence that the new Career Beliefs Scale is a reliable instrument for assessing career beliefs of employed adults. The study aimed at developing a new indigenous measure of career beliefs. The scale has been subjected to various analyses for establishing psychometrical properties of CBS. Results conclude that CBS is a highly reliable and valid instrument for measuring career beliefs of employed adults as well as students. CBS will be helpful to explore what types of career beliefs are prevalent in our culture. What beliefs need to be modified for better career behavior? In this way, it can also help in career counseling with employed adults.

Limitations and Suggestions

The sample of present study was comprised only adults employees, it is suggested for future studies to establish its norms for students sample too, because existing literature show that career beliefs in student life may help in career development in adulthood. Further, career beliefs should also be studied with other career related behavior such as career decision making, perceived career barriers etc. to understand their specific role in career related specific activities. Future studies should also focus on exploring dynamics of positive and negative career beliefs with particular reference to gender as in our culture due to different socialization practices gender play a significant role in the development of beliefs.

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Received: May 27, 2013