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# **Measuring personality at work : development and validation of a new instrument (HPEI) based on the Enneagram**

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# Introduction

In spite of the enduring scientific debates around the validity and usefulness of measuring personality in a work environment, practitioners continue to rely heavily on personality testing for selection decision making as well as for personal development purposes. These well-spread practices raise two major concerns. First of all, most personality measures used in a professional context provide scant, incomplete or troubling psychometric information concerning their construct-related and criterion-related validity.

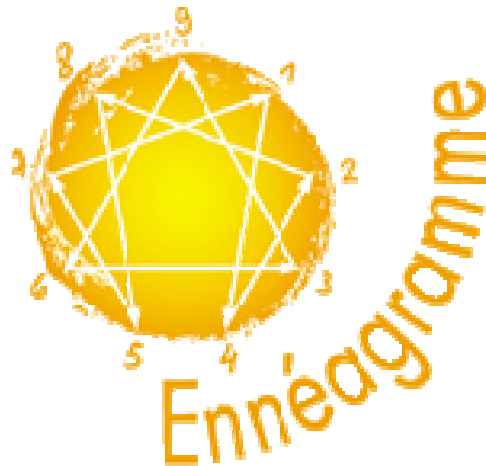
Second, over years, some theoretical models and some instruments have acquired a quasi-monopolistic position, which could be harmful to the progress of theories and practices in this field. In particular, the Big Five is now the dominant traits-based approach of personality and seems able to capture the wide range of dimensions tapped by most inventories whereas the Jungian typology and its privileged instrument, the MBTI, have become the main reference for the types-based approaches.

In this context, the present study describes the development of a new instrument, called Halin-Prémont Enneagram Inventory (HPEI), based on the Enneagram typology. Grounded in an original theoretical background, this typology would be totally non-redundant with major contemporary personality approaches, in particular with the Big Five and the Jungian theories. It would be also useful for understanding work attitudes such as career's preferences and team roles.

# The enneagram theory

The Enneagram is an emerging personality theory, based on the Sufi Philosophy. This theory was popularized in the Western world in the end of the 20th century. The Enneagram takes human egoistic fears and desires as the source of the formation of the personality and behavior.

This theory distinguishes nine personality types or bases:



**Base 1 : The Reformer or Perfectionist**

**Base 2 : The Helper or Altruist**

**Base 3 : The Motivator, Achiever or Successful person**

**Base 4 : The Romantic, Individualist or Sensitive person**

**Base 5 : The Thinker, Investigator or Wise person**

**Base 6 : The Skeptic or Loyalist**

**Base 7 : The Enthusiast or Happy person**

**Base 8 : The Leader, Challenger or Powerful person**

**Base 9 : The Peacemaker or Peaceful person**

# Methodology and samples

## Step 1: Generation and refinement of a pool of items

**1° Generation and reformulation of 108 items, with response on a Likert 5-point scale, screened by experts judging their content validity and formal qualities**

**2° Iterative sequence of reliability and principal components analysis on two different samples (N=285 et N=208)**

**→ Version Beta, including 59 items**

# Methodology and samples

## Step 2: Construct validity and reliability

**Does the HPEI measure 9 independent and reliable constructs? (see tables 1 & 2)**

**Reliability and principal components analysis on two different samples:**

**Sample 3: N= 346 – Age: mean = 33,36 – 32,1% male**

**Sample 4: N= 308 - Age: mean = 37,52 - 42% male**

# Methodology and samples

## Step 3: Convergent and discriminant validity with other personality instruments

**Are the 9 HPEI dimensions distincts but consistent with**

**→ the Jungian typology, measured by MBTI: 4 scores**

1. Extraversion – Introversion
2. Sensing – Intuition
3. Thinking – Feeling
4. Judgment – Perception

**→ the Big Five, measured by BB5 (B. Barbot): 5 scores**

1. Agreeableness
2. Conscientiousness
3. Extraversion
4. Emotional stability
5. Openness ton experience

**Sample 5: N=228 students (mean age: 21, male), and 5' (part of sample 5): N= 104**

# Methodology and samples

## Step 4: Criterion-related validity

**Does the HPEI contribute to explain vocational/professional behaviors?**

**→ Career anchors (Schein, 1985): 8 anchors measured on sample 5'**

1. Managerial
2. Security/stability
3. Entrepreneurial
4. Challenge
5. Work-life balance
6. Service
7. Autonomy
8. Technical

# Methodology and samples

## Step 4: Criterion-related validity

**Does the HPEI contribute to explain vocational/ professional behaviors?**

**→ Roles in team (MTRI , based on MBTI): 8 roles measured on sample 5'**

1. Coach (MTRI-FE)
2. Crusader (MTRI-FI)
3. Explorer (MTRI-NE)
4. Innovator (MTRI-NI)
5. Sculptor (MTRI-SE)
6. Curator (MTRI-SI)
7. Conductor (MTRI-TE)
8. Scientist (MTRI-TI)

## Step 5: Incremental validity

**Does the HPEI contribute to explain career's anchors and team roles over variance explained by BB5 ou MBTI? (see tables in appendix)**



# Construct validity

Table 1

Principal Component Analysis with Varimax Rotation

Items	1	2	3	4	5	6	7	8	9
Q26B1	.74								
Q19B1	.73								
Q35B1	.72								
Q11B1	.71								
Q1B1	.61								
Q48B1	.50								.32
Q25B2		.82							
Q38B2		.81							
Q14B2		.75							
Q2B2		.75							
Q50B2		.67							
Q36B7			.71						
Q7B7			.65						
Q24B7			.65						-.33
Q52B7			.63						
Q18B7			.63						
Q46B7			.46		.40				

# Construct validity

Table 1 (continued)  
Principal Component Analysis with Varimax Rotation

Q51B4				<i>.77</i>					
Q42B4				<i>.68</i>					
Q29B4				<i>.67</i>					
Q4B4				<i>.64</i>					
Q20B4				<i>.57</i>					
Q45B3					<i>.85</i>				
Q23B3					<i>.81</i>				
Q34B3	<i>.42</i>				<i>.59</i>				
Q53B3					<i>.57</i>				
Q3B3					<i>.43</i>				
Q41B8						<i>.77</i>			
Q8B8						<i>.72</i>			
Q15B8						<i>.68</i>			
Q49B8						<i>.66</i>			
Q30B8				<i>.30</i>		<i>.58</i>			

# Construct validity

Table 1 (continued)  
Principal Component Analysis with Varimax Rotation

Q22B5							<b>.64</b>		
Q5B5							<b>.63</b>		
Q32B5							<b>.61</b>		
Q40B5							<b>.59</b>		
Q54B5							<b>.55</b>		
Q10B5							<b>.49</b>		
Q47B5							<b>.48</b>		
Q27B5							<b>.35</b>		
Q17B9								<b>.74</b>	
Q56B9								<b>.73</b>	
Q44B9								<b>.60</b>	
Q9B9								<b>.45</b>	
Q12B6									<b>.74</b>
Q21B6									<b>.60</b>
Q55B6				.36					<b>.58</b>
Q6B6									<b>.56</b>
Eigenvalues	5.96	4.56	3.84	2.83	2.48	2.14	1.81	1.54	1.40
% explained variance	12.42	9.50	8.01	5.90	5.17	4.45	3.77	3.21	2.92

# Reliability and distribution

**TABLE 2**  
**Reliability and distribution of HPEI scales**

	<b>Mean</b>	<b>S.D</b>	<b>Cronbach's alpha</b>	<b>Variation Coefficient</b>	<b>Skewness</b>	<b>Kurtosis</b>
<b>Base1: The Reformer</b>	<b>3.65</b>	<b>.75</b>	<b>.80</b>	<b>.21</b>	<b>-.40</b>	<b>-.56</b>
<b>Base2: The Helper</b>	<b>3.72</b>	<b>.79</b>	<b>.85</b>	<b>.21</b>	<b>-.44</b>	<b>-.27</b>
<b>Base3: The Motivator</b>	<b>3.12</b>	<b>.87</b>	<b>.77</b>	<b>.28</b>	<b>-.23</b>	<b>-.66</b>
<b>Base4: The Romantic</b>	<b>2.96</b>	<b>.94</b>	<b>.75</b>	<b>.32</b>	<b>.21</b>	<b>-.56</b>
<b>Base5: The Thinker</b>	<b>3.56</b>	<b>.59</b>	<b>.70</b>	<b>.17</b>	<b>-.21</b>	<b>-.34</b>
<b>Base6: The Skeptic</b>	<b>3.30</b>	<b>.86</b>	<b>.71</b>	<b>.26</b>	<b>-.19</b>	<b>-.55</b>
<b>Base7: The Enthousiast</b>	<b>3.58</b>	<b>.72</b>	<b>.76</b>	<b>.20</b>	<b>-.47</b>	<b>-.12</b>
<b>Base8: The Leader</b>	<b>3.50</b>	<b>.86</b>	<b>.78</b>	<b>.25</b>	<b>-.34</b>	<b>-.60</b>
<b>Base9: The Peace-Maker</b>	<b>3.83</b>	<b>.70</b>	<b>.72</b>	<b>.18</b>	<b>-.70</b>	<b>.65</b>

N = 308

# Convergent/discriminant validity % BB5

Table 3

Pearson correlations between HPEI and BB5

	Agreeableness	Conscientiousness	Emotional stability	Extraversion	Openness to experience
Base1: The Reformer	<b>-.29***</b>	<b>.58***</b>	.00	.04	.05
Base2: The Helper	<b>.51***</b>	.00	-.09	<b>.17**</b>	<b>.21***</b>
Base3: The Motivator	<b>-.16*</b>	.10	<b>.21***</b>	<b>.23***</b>	<b>.18**</b>
Base4: The Romantic	.00	<b>-.21***</b>	<b>-.51***</b>	<b>-.20**</b>	<b>.19**</b>
Base5: The Thinker	<b>-.14*</b>	.00	-.01	<b>-.30***</b>	<b>.18**</b>
Base6: The Skeptic	<b>-.29***</b>	.00	<b>-.33***</b>	<b>-.29***</b>	.05
Base7: The Enthousiast	.13	<b>.15*</b>	<b>.17**</b>	<b>.38***</b>	<b>.43***</b>
Base8: The Leader	<b>-.21***</b>	.04	<b>.15*</b>	<b>.36***</b>	<b>.26***</b>
Base9: The Peace-Maker	<b>.36***</b>	-.07	-.09	-.08	.09

N= 228

# Convergent/discriminant validity % MBTI

**Table 4**

**Pearson correlations between HPEI and MBTI**

	<b>Extraversion- Introversion</b>	<b>Sensing- Intuition</b>	<b>Thinking- Feeling</b>	<b>Judgment- Perception</b>
<b>Base1: The Reformer</b>	<b>-.20*</b>	-.01	<b>.22**</b>	<b>-.21**</b>
<b>Base2: The Helper</b>	.04	-.03	-.14	-.11
<b>Base3: The Motivator</b>	.06	-.10	.17	-.11
<b>Base4: The Romantic</b>	-.13	-.13	-.12	-.11
<b>Base5: The Thinker</b>	-.13	.12	<b>.22**</b>	.02
<b>Base6: The Skeptic</b>	-.18	.11	.16	-.08
<b>Base7: The Enthusiast</b>	.08	-.18	.04	.00
<b>Base8: The Leader</b>	-.09	-.07	-.12	-.09
<b>Base9: The Peace-Maker</b>	-.09	.02	-.07	-.12

N= 104

# Criterion-related validity % career anchors

Table 5  
Pearson correlations between HPEI and career's anchors

	Managerial	Security/ stability	Entrepre neurial	Challenge	WorkLife Balance	Service	Autonomy	Technical
Base1: The Reformer	<b>0,26**</b>	0,05	<b>0,16*</b>	<b>0,30**</b>	-0,12	-0,02	<b>0,15*</b>	0,00
Base2: The Helper	-0,12	0,05	0,09	0,11	<b>0,21***</b>	<b>0,33***</b>	0,05	<b>0,15*</b>
Base3: The Motivator	<b>0,58***</b>	-0,12	<b>0,16*</b>	<b>0,28**</b>	<b>-0,18***</b>	<b>-0,28**</b>	0,10	<b>-0,15**</b>
Base4: The Romantic	-0,09	0,08	0,05	-0,11	<b>0,17**</b>	<b>0,24***</b>	0,08	<b>0,17**</b>
Base5: The Thinker	0,11	0,05	0,10	0,03	0,05	0,08	0,10	-0,02
Base6: The Skeptic	0,12	<b>0,15*</b>	0,11	0,07	0,07	0,02	0,04	0,07
Base7: The Enthousiast	<b>0,24***</b>	<b>-0,22**</b>	<b>0,25***</b>	<b>0,42**</b>	-0,04	<b>0,20**</b>	<b>0,21***</b>	<b>-0,14</b>
Base8: The Leader	<b>0,17**</b>	-0,11	<b>0,17**</b>	<b>0,19**</b>	-0,01	0,05	<b>0,18***</b>	-0,02
Base9: The PeaceMaker	-0,07	<b>0,14</b>	-0,08	0,02	<b>0,24***</b>	<b>0,25**</b>	-0,04	0,03

N = 223

# Criterion-related validity

## % team roles

Table 6  
Pearson correlations between HPEI and MTRI

	MTRIFE	MTRIFI	MTRINE	MTRINI	MTRISE	MTRISI	MTRITE	MTRITI
<b>Base1: The Reformer</b>	<b>-0,32***</b>	-0,06	<b>0,20*</b>	-0,13	0,07	-0,12	<b>0,37***</b>	-0,02
<b>Base2: The Helper</b>	<b>0,50***</b>	-0,04	-0,09	<b>0,22*</b>	<b>-0,28***</b>	-0,10	-0,13	-0,09
<b>Base3: The Motivator</b>	<b>-0,37***</b>	<b>0,20*</b>	0,03	-0,08	<b>-0,21*</b>	<b>-0,22*</b>	0,20	0,01
<b>Base4: The Romantic</b>	-0,04	0,07	-0,10	0,18	0,01	-0,09	-0,04	-0,08
<b>Base5: The Thinker</b>	<b>-0,25*</b>	0,00	-0,03	-0,02	-0,03	0,06	0,10	0,19
<b>Base6: The Skeptic</b>	<b>-0,23*</b>	-0,11	0,06	-0,04	0,14	-0,19	0,25	0,11
<b>Base7: The Enthusiast</b>	-0,10	-0,07	<b>0,25*</b>	<b>0,22*</b>	0,06	<b>-0,36***</b>	0,13	-0,12
<b>Base8: The Leader</b>	-0,18	0,12	0,06	-0,02	0,18	<b>-0,23*</b>	0,07	-0,03
<b>Base9: The PeaceMaker</b>	<b>-0,29***</b>	0,03	-0,04	0,16	<b>-0,30***</b>	0,03	-0,09	-0,08

N = 99



# Criterion-related validity % career's anchors

	Managerial	Security/ stability	Entrepre- neurial	Challenge	Work-Life Balance	Service	Autonomy	Technical
	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$
<b>Base1: The Reformer</b>	.065	.113	.068	<b>.202**</b>	-.079	.061	.097	.060
<b>Base2: The Helper</b>	-.095	.040	.141	.075	.128	<b>.225***</b>	.063	<b>.195**</b>
<b>Base3: The Motivator</b>	<b>.517***</b>	-.077	.040	.121	-.144	<b>-.337***</b>	-.016	-.122
<b>Base4: The Romantic</b>	-.093	.025	.019	<b>-.144*</b>	.091	.160*	.069	.156*
<b>Base5: The Thinker</b>	.018	-.030	.120	.013	.019	.112	.136	-.019
<b>Base6: The Skeptic</b>	.039	.130	.043	.015	.081	-.041	-.052	.058
<b>Base7: The Enthousiast</b>	<b>.117*</b>	<b>-.234***</b>	<b>.184**</b>	<b>.332***</b>	-.047	<b>.195**</b>	<b>.160*</b>	<b>-.170**</b>
<b>Base8: The Leader</b>	.014	-.051	.106	.067	.064	.089	.129	.019
<b>Base9: The Peace-Maker</b>	.054	.134	<b>-.159*</b>	.037	<b>.137*</b>	.061	-.093	-.081
<b>R<sup>2</sup></b>	<b>.37***</b>	<b>.11**</b>	<b>.13***</b>	<b>.27***</b>	<b>.12***</b>	<b>.27***</b>	<b>.09**</b>	<b>.10**</b>

Note : N = 223 ;  $\beta$  coefficients are standardised. \* :  $p < .05$ , \*\* :  $p < .01$ , \*\*\* :  $p < .001$

# Criterion-related validity % team roles

VD: Team roles	Coach	Crusader	Explorer	Innovator	Sculptor	Curator	Conductor	Scientist
IV : HPEI	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$
Base1: The Reformer	<b>-.176*</b>	-.106	.174	-.124	-.063	.042	<b>.293**</b>	-.049
Base2: The Helper	<b>.370***</b>	-.006	-.199	.095	-.172	-.088	-.081	.051
Base3: The Motivator	-.170	<b>.280**</b>	-.142	-.070	.120	-.102	.035	.012
Base4: The Romantic	.023	.187	-.208	.158	.032	.062	-.159	-.096
Base5: The Thinker	<b>-.202*</b>	.094	-.157	-.020	-.052	.160	-.027	.222
Base6: The Skeptic	-.023	<b>-.253*</b>	.124	-.090	.119	-.220	.223	.101
Base7: The Enthousiast	-.071	-.141	<b>.329**</b>	<b>.226*</b>	.058	<b>-.310**</b>	.080	-.146
Base8: The Leader	-.106	.107	-.005	.000	.135	-.147	-.021	.030
Base9: The Peace-Maker	.153	-.009	.113	.054	<b>-.229*</b>	.058	.000	-.135
R <sup>2</sup>	<b>.43***</b>	<b>.13</b>	<b>.16*</b>	<b>.13</b>	<b>.18*</b>	<b>.22**</b>	<b>.19*</b>	<b>.08</b>

Note : N = 99 ;  $\beta$  coefficients are standardised. \* :  $p < .05$ , \*\* :  $p < .01$ , \*\*\* :  $p < .001$

# Incremental validity over MBTI

## % career anchors

Table 9

Hierarchical multiple regressions of **career anchors on MBTI and HPEI**

Career's anchors	Managerial		Security/stability		Entrepreneurial		Challenge	
	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$		$\beta$
<u>Step 1: MBTI</u>	.004	-.040	-.098	-.080	.144	.167	.127	.114
- Extraversion - Introversion	-.082	-.031	.140	.088	.009	.025	.064	.119
- Sensing - Intuition	.204*	.035	-.204*	-.227*	.219*	.138	.140	-.013
- Thinking - Feeling	-.125	-.033	-.144	-.115	-.071	-.016	-.210*	-.095
- Judgment - Perception								
<u>Step 2 : HPEI</u>		.031		.088		.057		.276**
-Base 1 : The Reformer		-.118		.173*		.091		-.058
-Base 2 : The Helper		.473***		-.057		.127		.192
-Base 3 : The Motivator		-.146		.037		-.043		-.198*
-Base 4 : The Romantic		.034		-.017		.097		-.152
-Base 5 : The Thinker		.125		.111		.194		.189
-Base 6 : The Skeptic		.175*		-.135		.104		.325**
-Base 7 : The Enthousiast		.104		-.268**		.211*		.067
-Base 8 : The Leader		.001		.030		-.176		.061
-Base 9 : The Peace-Maker								
R <sup>2</sup> for complete equation	.05	.44***	.10*	.23*	.06	.25**	.06	.39***
$\Delta$ R <sup>2</sup>		.39***		.13		.19**		.33***

Note : N = 104 ;  $\beta$  coefficients are standardised. \* :  $p < .05$ , \*\* :  $p < .01$ , \*\*\* :  $p < .001$

# Incremental validity over MBTI

## % career anchors

Table 10

Hierarchical multiple regressions of **career anchors on MBTI and HPEI**

Career's anchors	Work-Life Balance		Service		Autonomy		Technical	
	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$
<u>Step 1: MBTI</u>								
- Extraversion - Introversion	-.023	.012	.025	.103	.015	.039	.015	.039
- Sensing - Intuition	.126	.105	.020	.032	.167	.219*	.167	.219
- Thinking - Feeling	-.246**	-.210	-.156	-.097	.128	.044	.128	.044
- Judgment - Perception	-.086	-.074	-.194	-.159	-.092	-.017	-.092	-.017
<u>Step 2 : HPEI</u>								
-Base 1 : The Reformer		-.030		.111		.244*		.244*
-Base 2 : The Helper		.185*		.184		.007		.007
-Base 3 : The Motivator		-.072		-.276**		.104		.104
-Base 4 : The Romantic		.123		.152		.059		.059
-Base 5 : The Thinker		.148		-.022		.132		.132
-Base 6 : The Skeptic		-.013		.137		-.103		-.103
-Base 7 : The Enthousiast		-.059		.159		.124		.124
-Base 8 : The Leader		-.030		.076		.176		.176
-Base 9 : The Peace-Maker		.112		.143		-.100		-.100
R <sup>2</sup> for complete equation	.09*	.21*	.07	.33***	.05	.23*	.04	.15
$\Delta R^2$		.12		.26***		.18*		.10

Note : N = 104 ;  $\beta$  coefficients are standardised. \* :  $p < .05$ , \*\* :  $p < .01$ , \*\*\* :  $p < .001$

# Incremental validity over BB5 % career anchors

Table 11

Hierarchical multiple regressions of **career anchors on BB5 and HPEI**

Career's anchors	Managerial		Security/stability		Entrepreneurial		Challenge	
	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$
<b>Step 1: BB5</b>	-.272***	-.120	.134*	.112	-.068	.056	-.098	-.040
- Agreeableness	-.028	-.149*	.130*	.084	-.031	-.177*	.103	-.102
- Conscientiousness	.210**	.193**	-.090	.019	-.005	-.074	.174*	.095
- Extraversion	.201**	.145*	-.166*	-.085	.039	.068	.103	.109
- Emotional stability	.164*	.091	-.216**	-.228**	.335***	.249***	.185**	.074
- Openness to experience								
<b>Step 2 : HPEI</b>		.156*		.060		.199*		.274***
-Base 1 : The Reformer		-.082		.018		.097		.082
-Base 2 : The Helper		.456***		-.046		.013		.077
-Base 3 : The Motivator		-.034		.042		-.021		-.115
-Base 4 : The Romantic		.002		.036		.045		.000
-Base 5 : The Thinker		.083		.129		.069		.050
-Base 6 : The Skeptic		.044		-.160*		.129		.264***
-Base 7 : The Enthousiast		-.105		.023		.066		.006
-Base 8 : The Leader		.091		.107		-.160*		.047
-Base 9 : The Peace-Maker								
R <sup>2</sup> for complete equation	.18***	.43***	.11***	.15***	.11***	.19***	.14***	.29***
$\Delta R^2$		.25***		.05		.08***		.15***

Note : N = 227 ;  $\beta$  coefficients are standardised. \* :  $p < .05$ , \*\* :  $p < .01$ , \*\*\* :  $p < .001$

# Incremental validity over BB5 % career anchors

Table 12

Hierarchical multiple regressions of **career anchors on BB5 and HPEI**

Career's anchors	Work-Life Balance		Service		Autonomy		Technical	
	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$
<u>Step 1: BB5</u>	.257***	.176*	.222***	.029	-.024	.093	.107	.050
- Agreeableness	-.023	.007	.039	-.020	.045	-.038	-.021	-.089
- Conscientiousness	-.084	-.018	-.088	-.041	-.038	-.105	-.072	-.053
- Extraversion	-.099	.025	-.126	.070	.056	.086	-.114	.080
- Emotional stability	.008	-.061	.227***	.093	.274***	.178*	-.148*	-.207**
- Openness to experience								
<u>Step 2 : HPEI</u>		-.061		.086		.143		.113
-Base 1 : The Reformer		.078		.216**		.013		.227**
-Base 2 : The Helper		-.145*		-.353***		-.027		-.121
-Base 3 : The Motivator		.108		.165*		.070		.195**
-Base 4 : The Romantic		.036		.080		.066		.006
-Base 5 : The Thinker		.125		-.018		-.012		.063
-Base 6 : The Skeptic		-.052		.153*		.121		-.099
-Base 7 : The Enthusiast		.116		.082		.125		.068
-Base 8 : The Leader		.096		.054		-.106		-.105
-Base 9 : The Peace-Maker								
R <sup>2</sup> for complete equation	.07**	.14**	.10***	.28***	.08**	.13**	.06*	.08*
$\Delta R^2$		.07*		.18***		.05		.14**

Note : N = 227 ;  $\beta$  coefficients are standardised. \* :  $p < .05$ , \*\* :  $p < .01$ , \*\*\* :  $p < .001$

# Incremental validity over MBTI

## % team roles

Table 13

Hierarchical multiple regressions of **Team roles (MTRI)** on **MBTI** and **HPEI**

Team roles	Coach		Crusader		Explorer		Innovator	
	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$
<u>Step 1: MBTI</u>	.103	.074	-.104	-.139	.245*	.279**	.187	.184
- Extraversion - Introversion	.066	.028	.034	.085	-.243*	-.265**	-.126	-.084
- Sensing - Intuition	-.368***	-.193*	-.184	-.196	.038	-.078	-.142	-.069
- Thinking - Feeling	.030	-.002	.046	.064	-.054	-.007	-.017	-.022
- Judgment - Perception								
<u>Step 2 : HPEI</u>		-.126		-.080		.253*		-.105
-Base 1 : The Reformer		.365***		-.028		-.189		.144
-Base 2 : The Helper		-.174		.344**		-.171		-.065
-Base 3 : The Motivator		.031		.134		-.283**		.142
-Base 4 : The Romantic		-.155		.080		-.073		.042
-Base 5 : The Thinker		-.005		-.238		.188		-.056
-Base 6 : The Skeptic		-.078		-.081		.234*		.167
-Base 7 : The Enthousiast		-.108		.026		.019		.027
-Base 8 : The Leader		.139		-.022		.146		.072
-Base 9 : The Peace-Maker								
R <sup>2</sup> for complete equation	.15**	.48***	.04	.16	.12*	.29**	.08	.19
$\Delta$ R <sup>2</sup>		.33***		.12		.17*		.11

Note : N = 95 ;  $\beta$  coefficients are standardised. \* :  $p < .05$ , \*\* :  $p < .01$ , \*\*\* :  $p < .001$

# Incremental validity over MBTI

## % team roles

Table 14

Hierarchical multiple regressions of Team roles (MTRI) on MBTI and HPEI

Team roles	Sculptor		Curator		Conductor		Scientist	
	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$
<u>Step 1: MBTI</u>								
- Extraversion - Introversion	-.081	-.109	-.050	-.036	-.113	-.077	-.144	-.128
- Sensing - Intuition	.117	.198*	.117	.059	.176	.182	-.208*	-.276**
- Thinking - Feeling	.262*	.275*	.095	.146	.085	-.089	.249*	.239*
- Judgment - Perception	-.087	-.138	.087	.024	-.101	.002	.103	.081
<u>Step 2 : HPEI</u>								
-Base 1 : The Reformer		-.170		.025		.320**		-.115
-Base 2 : The Helper		-.197		-.113		-.126		.121
-Base 3 : The Motivator		.118		-.121		.020		.012
-Base 4 : The Romantic		.041		.089		-.093		-.077
-Base 5 : The Thinker		-.131		.129		-.044		.179
-Base 6 : The Skeptic		.074		-.262*		.196		.099
-Base 7 : The Enthusiast		.135		-.296**		.143		-.217*
-Base 8 : The Leader		.146		-.123		-.029		.048
-Base 9 : The Peace-Maker		-.261*		.055		-.028		-.082
R <sup>2</sup> for complete equation	.09	.32***	.04	.26**	.06	.24*	.14**	.22*
$\Delta R^2$		.23**		.22**		.18*		.08

Note : N = 95 ;  $\beta$  coefficients are standardised. \* :  $p < .05$ , \*\* :  $p < .01$ , \*\*\* :  $p < .001$



# Incremental validity over BB5

## % team roles

Table 15

Hierarchical multiple regressions of **Team roles (MTRI)** on **BB5** and **HPEI**

Team roles	Coach		Crusader		Explorer		Innovator	
	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$		$\beta$
<u>Step 1: BB5</u>	.455***	.143	.085	.132	-.080	.036	.199*	.082
- Agreeableness	-.309**	-.360**	-.114	-.023	.228*	.265	-.100	.052
- Conscientiousness	.037	.176	.084	.036	.079	-.062	-.051	-.137
- Extraversion	-.135	.076	.066	.075	.068	.015	-.043	.091
- Emotional stability	.008	.129	-.069	-.172	.137	.177	.346***	.338**
- Openness to experience								
<u>Step 2 : HPEI</u>		.033		-.083		-.004		-.174
-Base 1 : The Reformer		.366***		-.024		-.261		.073
-Base 2 : The Helper		-.242**		.266*		-.159		-.125
-Base 3 : The Motivator		-.033		.245		-.177		.133
-Base 4 : The Romantic		-.123		.133		-.259		-.132
-Base 5 : The Thinker		.094		-.191		.159		-.035
-Base 6 : The Skeptic		-.179		-.103		.236		.084
-Base 7 : The Enthousiast		-.160		.147		.017		.025
-Base 8 : The Leader		.107		-.023		.123		.023
-Base 9 : The Peace-Maker								
R <sup>2</sup> for complete equation	.32***	.52***	.03	.15	.13*	.22	.16**	.22
$\Delta$ R <sup>2</sup>		.20***		.12		.09		.06

Note : N = 98 ;  $\beta$  coefficients are standardised. \* :  $p < .05$ , \*\* :  $p < .01$ , \*\*\* :  $p < .001$

# Incremental validity over BB5

## % team roles

Table 16

Hierarchical multiple regressions of **Team roles (MTRI)** on **BB5** and **HPEI**

Team roles	Sculptor		Curator		Conductor		Scientist	
	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$
<u>Step 1: BB5</u>	-.265**	.003	.027	-.170	-.328**	-.265	-.075	.057
- Agreeableness	.039	.166	.095	.187	.199	-.077	-.016	-.134
- Conscientiousness	.112	-.117	-.246*	-.095	-.026	-.058	-.011	.234
- Extraversion	.044	.013	-.030	-.142	.044	.092	-.015	-.253
- Emotional stability	-.048	-.120	-.294*	-.194	.000	-.087	-.047	-.017
- Openness to experience								
<u>Step 2 : HPEI</u>		-.156		-.055		.343**		.035
-Base 1 : The Reformer		-.190		-.053		.043		-.006
-Base 2 : The Helper		.150		-.021		.073		.018
-Base 3 : The Motivator		.089		.059		-.086		-.245
-Base 4 : The Romantic		-.102		.166		-.061		.376
-Base 5 : The Thinker		.093		-.360**		.105		.119
-Base 6 : The Skeptic		.147		-.176		.170		-.171
-Base 7 : The Enthousiast		.189		-.120		-.079		-.012
-Base 8 : The Leader		-.210		.096		.035		-.143
-Base 9 : The Peace-Maker								
R <sup>2</sup> for complete equation	.07	.21	.17**	.29**	.15**	.26*	.01	.13
$\Delta R^2$		.14		.12		.11		.12

Note : N = 98 ;  $\beta$  coefficients are standardised. \* :  $p < .05$ , \*\* :  $p < .01$ , \*\*\* :  $p < .001$

# Conclusion

These studies support the psychometric soundness of the Halin-Prémont Ennéagram Inventory, a new personality inventory based on the Enneagram theory:

√ Its **construct validity** is established by principal component analysis displaying clearly 9 orthogonal factors. It should be confirmed by confirmatory factor analysis.

√ All **reliability coefficients** are above the threshold of .70 and are greater than those reported by the Riso-Hudson Enneagram Type Indicator (Newgent et al., 2004)

√ As regard **convergent/discriminant validity**, correlations between HPEI and **BB5 or MBTI** range from .00 to .58 and indicate that HPEI taps original personality features. Moreover, correlation with BB5 are consistent with conceptual meaning of measured variables and with previous results (Newgent et al., 2004).

√ As regard **criterion-related validity**, the HPEI contributes significantly and consistently to predict **career's preferences** as well as most of **roles in teamwork**.

√ Finally, the HPEI seems to explain variance in career's preferences and team roles over variance explained by MBTI or BB5, which support its **incremental validity** in the sphere of work-relevant personality inventories.

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