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Comparing Groups' Affective Sentiments to Group Perceptions

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ABSTRACT

Affect control theory focuses on interaction among individuals, not groups. Groups, like individual identities, vary in affective sentiments across the dimensions of evaluation, potency, and activity, but a separate literature shows the importance of the group perceptions of entitativity, homogeneity, essentialism, and agency. Therefore, to consider affect control theory's applicability to groups, we compare these principal group perceptions to affective sentiments for 64 group concepts. The results reveal that affective sentiments correlate with all four group perceptions in meaningful ways.

INTRODUCTION

Affect control theory (ACT) is a grounded and mathematical social psychological theory connecting interaction, perception, and emotion thereby allowing for specific predictions, generative theory building, and modeling of internal and social processes (Heise 2007, MacKinnon and Robinson 2014). ACT primarily theorizes about individuals in interactions and its full applicability to groups has not been established. However groups, like individuals, have identities and may engage in interaction. More importantly, people *perceive* groups as engaging in social interaction and even attribute emotional states to them, suggesting groups can function as actors or objects-recipients from a symbolical interactionism perspective.

While evaluation, potency and activity—the core affective sentiments undergirding all of ACT—can be measured for groups, little is known about how these affective dimensions relate to perceived properties of groups. A large body of group perception research indicates that interactions with and responses to groups and their members is based on specific perceptions of that group (Hamilton 2007). Herein, we map ACT's universal affective dimensions onto the principal and most widely applicable group perceptions. By doing so we show that affective sentiments are associated with group perceptions, thereby building onto the foundation for the inclusion of groups in ACT.

AFFECT CONTROL THEORY AND GROUPS

Most ACT research on groups focuses on group stereotypes and affective sentiments. Canadian regional stereotypes codified as sentiments predict intergroup interactions and affective impressions (MacKinnon and Bowlby 2000). Similarly, across variety of stereotyped groups ACT predicts and receives support for behavioral and emotional reactions both similar to and different from the stereotype content model (Rogers, Schröder and Scholl 2013). Furthermore, the affective sentiments of stereotyped groups vary wildly among cultures based on those culture's values and behavioral expectations, but reveal considerable consensus within cultures (Schröder et al. 2013). Since ACT models interactions as occurring between individuals who possess identities, group-level stereotypes also exert influence through the situational assignment of identities along with their affective meaning (Morgan 2018).

In the only ACT study of groups-as-actors, the theory accurately predicts cooperative versus conflict events and somewhat accurately predicts behavioral domination among countries in the Middle East (Heise and Lerner 2006). This was done under the assumption that Middle Eastern leaders, as individuals, embodied their countries, as groups. Other ACT research models or predicts individual interaction within groups such as juries (Heise 2013), corporations (Francis and Heise 2008, Schneider 2002), support groups (Francis 1997), and religious groups (Smith-Lovin and Douglass 1992). In sum, the extant ACT research on groups focuses on individuals within them, group stereotypes, or country-to-country interaction, with no research in ACT systematically focusing on a diverse sample of types of groups and general perceptions of them.

AFFECTIVE DIMENSIONS

The affective dimensions of evaluation, potency, and activity (EPA) are critical to our understanding of many social phenomenon including communication, shared understanding, defining situations, human adaptation, and instinctual learning (Scholl 2013). *Evaluation*, ranging from bad to good, can reflect differences in morality, social warmth, pro-sociality, or status. *Potency*, measuring from weak to strong, can refer to controlling resources, coercive power, physical strength, size, or social influence. *Activity*, from inactive to active, reflects liveliness or energy including physical movement, loudness, youthfulness, intensity, and arousal. Sentiments are measured on these three dimensions using semantic differentials—numbered scale with two linguistic polar opposites—which have been shown as reliable and effective way of measuring affective meaning (Heise 2010, Osgood, Suci and Tannenbaum 1957). Outside of ACT, many other theories use some or all of these dimensions to measure emotion, cognition, communication, behavior or social interaction (Scholl 2013).

These dimensions are fundamentally important because they reflect our primary way of processing the affective meaning of our social world and guide us in daily life (Robinson and Smith-Lovin 2006). They explain variance among language concepts and activate specific regions of the brain (Skrandies 2011), yet are highly stable within a language-culture and across time (Osgood, May and Miron 1975). Additionally, concept dictionaries with sentiment averages for a specifically language-culture have been collected for the USA, Canada, Japan, Germany, North Ireland, India, China, Egypt (MacKinnon and Robinson 2014) and Morocco, further strengthening the cross-cultural validity of these sentiments.

GROUP PERCEPTIONS

Recent group perception research has been guided by four concepts that are fundamental to perceptions of all groups: homogeneity, essentialism, agency, and entitativity (Hamilton 2007). Cohesiveness, stability, permeability, duration, size, hierarchy, leadership, and importance are also perceptual properties of groups, but are difficult to accurately perceive from an external perspective and may not apply to all group types (e.g., duration and permeability make little sense for social categories, such as races). Furthermore, many of these concrete properties mentioned can be encompassed by the broader, and more abstract, perceptions of homogeneity, essentialism, agency, and entitativity (Hamilton 2007, Lickel et al. 2000). Therefore, these four properties are to group perceptions research what evaluation, potency, and activity are to ACT.

Homogeneity is the perceived sameness of a group, including members sharing similar characteristics (Hamilton 2007). A football team, for example, is very homogeneous because the members are large, young, and physically fit males who likely love the sport. Meanwhile landlords have fewer similarities as a group, save their owning and renting property.

Essentialism relates to an innate essence that is difficult to alter, thereby distinguishing groups as natural and artificial (Hamilton 2007). Plants, animals, and rocks have inherent properties that make them natural groups, while human creations like tools, art, and social categories are artificial. However, even though social groups are artificial categories, people often perceive them as natural (Haslam, Rothschild and Ernst 2000). Being highly essential means perceivers make more inferences about the group and members cannot easily change membership (Hamilton 2007). Examples include racial/ethnic groups like Black or Hispanic, since members cannot change their race or ethnicity easily and people make judgments about members of those groups based on “assumed” inherent traits (Spencer-Rodgers, Hamilton and Sherman 2007). In contrast, a group like video gamers lacks essentialism because their common trait of playing video games can be stopped and perceivers make fewer inferences based on it.

Agency is the perceived ability of a group to influence the world, accomplish goals, and produce change (Hamilton 2007). The company Apple is very agentic because they have many devoted employees and large amounts of resources to pursue its goals. Conversely the United States government has been criticized as slow to change and act despite its grand size and power. People often ascribe agentic actions and the resulting responsibility to groups such as corporations (Rai and Diermeier 2015).

Entitativity measures how much a group is perceived *as a group* (Campbell 1958, Hamilton 2007). A rock band is often entitative because of the importance to its members and fans, the similarity, common activities, and common outcomes of the band members, and their close bonds to one another. A line at the bank has none of those things (Lickel et al. 2000). Entitativity has been found to correlate well with all three of the previous concepts in addition to common fate and continuance (Campbell 1958, Lickel et al. 2000, Spencer-Rodgers, Hamilton and Sherman 2007).

The four perceptions are each distinct concepts, but often are operational, redefined, or empirically found to be related. Homogeneity and entitativity usually correlate (Hamilton 2007), but some studies find that this relationship can be weakened or eliminated (Hamilton, Sherman and Rodgers 2004, Lickel et al. 2000). Likewise, some researchers consider entitativity to be a part of essentialism (Haslam, Rothschild and Ernst 2000, Rothbart and Taylor 1992), while others use them as different measures (Campbell 1958, Hamilton, Sherman and Rodgers 2004). Agency is sometimes considered a part of entitativity (Hamilton 2007), but empirically it is often separated (Spencer-Rodgers, Hamilton and Sherman 2007). To our knowledge, no one has directly compared group perceptions and affective sentiments.

METHODS

Group Concept Selection

We conducted a pilot test to obtain preliminary EPA ratings on 170 group concepts which included four different group types (Lickel et al. 2000). (1) Primary or social groups are relatively small semi-permeable groups important to their members because they give a sense of belonging. (2) Task groups are small, short-lived, and primarily differ from social groups in their goal orientation and higher permeability. (3) Categories are large impermeable identifying groups that include members with similar traits, but do not regularly interact. (4) Collectives or loose associations are groups of people in close proximity, often by chance, making them highly permeable and short-lived.

We selected 56 group concepts from the pilot test which varied in group type and affective sentiment and then added in the 8 groups from Spencer-Rodgers, Hamilton and Sherman's study 2 (2007). We classified many of these 64 as representing multiple group types (Lickel et al. 2000) including 9 primary (e.g., *An Estranged Family*), 11 primary/task (e.g., *A Role Playing Group*), 9 task (e.g., *A Firing Squad*), 7 task/categories (e.g., *Walmart Greeters*), 13 categories (e.g., *Newborns*), 6 categories/collectives (e.g., *Nursing Home Patients*) and 9 collectives (e.g., *Strip Club Customers*; see Appendix B for full list).

Procedure and Measures

Our online survey included demographic questions, instructions on EPA slider rating, followed by 20 of 64 randomly picked concepts. For each concept, there were three randomly ordered and oriented EPA sliders (e.g., *bad, awful* (-4) to *good, nice* (+4)) followed by four nine-point group perception questions (-4 to +4; Appendix A) taken from Spencer-Rodgers, Hamilton and Sherman (2007: study 2). Participants were instructed to mark "Skip/I don't know this concept" as applicable.

Participants and Exclusions

We recruited 169 participants from Amazon Mechanical Turk who rated at least 60% of the concepts and had lived in the US the majority of their lives. From this dataset we removed 14 extreme inattention cases following previous ACT procedures (Heise 2010, Shank and Lulham

2017): 1 case for a polarity of <.6 (nearly all ratings were near 0), 1 case for all correlations among of evaluation, potency, and activity exceeding .9, and 12 cases for making 90% or more (usually 100%) of their ratings using exclusively the right or left side of the slider. The final 155 participants rated each concept an average of 46.75 times (see Appendix B for values).

RESULTS

Sample Distributions and Relationship to Group Types

The group concepts were distributed in affective space with 39.1% (25) rated as bad, 43.8% (28) rated as weak, and 32.8% (21) being rated as inactive, and low positive sample means for evaluation, potency, and activity (Table 1). ANOVAs predicting differences in EPA by the seven group types/multitypes indicated no significant differences ($F_{(6,57)} \leq 1.71$, $p \geq .136$) and ANOVAs with dummy-variables for each of the four types also showed no significant differences (Table 2; task groups were marginally more potent: .57 vs. -.02). Based on this, we conclude that our concept set is appropriate for considering the relationship between affective sentiments and group perceptions.

Table 1: Means, standard deviations, and minimum and maximum with concepts for affective sentiments and group perceptions.

	Mean	SD	Minimum	Maximum
Evaluation	.14	1.70	-3.41 A Sex Trafficking Ring	2.46 A Volunteer Group
Potency	.23	1.31	-3.02 Newborns	2.53 A Firing Squad
Activity	.58	1.45	-2.61 Nursing Home Patients	3.09 An Angry Mob
Entitativity	1.12	1.10	-2.22 Estranged Friends	3.06 A Family
Homogeneity	.73	.86	-2.02 A Hung Jury	2.30 A Cult
Essentialism	-.05	1.28	-2.10 Telemarketers	3.32 A Family
Agency	.46	1.39	-2.19 Newborns	2.91 A Jury

Table 2: $F(1,59)$ statistics from ANOVAs of group type dummy variables on affective sentiments and group perceptions.

	Evaluation	Potency	Activity	Entitativity	Homogeneity	Essentialism	Agency
Collectives	.05	1.36	1.87	1.28	.30	1.68	.05
Categories	.14	2.32	.03	.01	1.97	.02	.47
Task	.08	3.43†	1.86	3.12†	.66	13.52***	4.24*
Primary	.05	1.02	.59	3.68†	7.99**	.24	.98

*** $p \leq .001$, ** $p \leq .01$, * $p \leq .05$, † $p \leq .1$

Note: The models use all four group types and do not have a reference category due to non-mutual exclusivity of group types.

Since the concepts were selected based on EPA distributions, group perceptions were less distributed than EPA with 17.2% (11) being less entitativity, 18.8% (12) more heterogeneous (negative homogeneity), 53% (34) artificial (negative essentialism), and 35.9% (23) less agentic (means in Table 1). Likewise, an ANOVA of the seven group type/multitypes revealed that entitativity ($F(6,57)=2.41, p=.039$) and essentialism ($F(6,57)=2.57, p=.039$) different between types. An ANOVA with dummy variables for each type (Table 2) indicated that primary groups were perceived as more homogeneous (1.11 vs. .54) and that task groups were perceived as less essential (-.66 vs .40) and more agentic (.94 vs. .11). Additionally, primary and task groups were both perceived as marginally more entitative (1.55 vs. .92 and 1.40 vs. .92, respectively). As expected, group perceptions are tied closely to the group type whereas affective sentiments are more universal across group types.

Do Affective Sentiments Correspond to Group Perceptions?

Conducting a correlations of means between affective sentiments and group perceptions (Table 3: shaded above the diagonal), we found that evaluation correlates with essentialism, potency correlates with entitativity and agency, and activity correlations with entitativity, homogeneity, and agency, covering all affective sentiments and group perceptions. Additionally, we conducted correlations between affective sentiments and group perceptions across all concepts, but at the individual rating level as group perceptions are often conceptualized as individual attributions or impressions. Essentially, this shows whether individuals correspond in their rating of affective sentiments and group perceptions. This analysis (Table 3: shaded below the diagonal) revealed the same pattern of positive correlations (bolded), albeit with lower values, suggesting that there is more variation at an individual level than at the cultural level.

Table 3: Correlations of affective sentiments to group perceptions

	Evaluation	Potency	Activity	Entitativity	Homogeneity	Essentialism	Agency
Evaluation	-	-.124	-.253*	.209†	-.061	.611***	.048
Potency	.031	-	.494***	.472***	.172	-.134	.897***
Activity	-.166	.366	-	.375**	.319**	-.149	.473***
Entitativity	.111	.226	.217	-	.587***	.336**	.613***
Homogeneity	.005	.084	.146	.454	-	.209†	.256*
Essentialism	.329	.015	-.022	.314	.253	-	.042
Agency	.108	.621	.305	.374	.195	.139	-

*Above the diagonal, concept-level correlations. $N = 64$. *** $p \leq .001$, ** $p \leq .01$, * $p \leq .05$, † $p \leq .1$.*

Below the diagonal, individual-level correlations across all concepts. Significance is not reported because $N \approx 9920$ depending on missing individual values.

Note: Shaded boxes are the correlations of interest and bolded terms of the significant ones at the concept-level.

Evaluation and activity have a low negative correlation and potency and activity have a moderate positive correlation (Table 3), as would be expected (Heise 2010). Likewise, entitativity was positively correlated with all three other group perceptions which are sometimes considered sub-factors of entitativity (Spencer-Rodgers, Hamilton and Sherman 2007). Homogeneity and agency were also correlated, suggesting those groups that have more diversity are able to act less forcefully, at least in this sample.

Do Affective Sentiments Predict Group Perceptions?

Since people rely on affective sentiments to interpret and perceive the world, the affective sentiments of groups may undergird group perceptions. Therefore we conduct a regression (Table 4) to interpret how affective sentiments predict group perceptions, with the caveat that causality cannot be determined from correlational survey data. Evaluation, potency and activity each increase entitativity: the better, stronger, and livelier an aggregate of people appears, the more it is perceived to be a group. Additionally, livelier groups appear more homogeneous. Perceiving a group as good is associated with perceiving it as natural or having essential qualities. While evaluation has a small positive effect on agency, the coefficient for potency indicates that general perceived power and ability to take action are closely aligned. Finally, the R-squares indicate that affective sentiments do not adequately explain homogeneity, explain some of entitativity and essentialism, and, because of potency, nearly completely explain agency of groups.

Table 4: Linear regressions using affective sentiments to predict group perceptions.

	Entitativity	Homogeneity	Essentialism	Agency
Constant	.91***	.62***	-.12	.18*
Evaluation	.21**	.01	.46***	.15**
Potency	.32***	.01	-.08	.93***
Activity	.21*	.19*	.04	.08
R ²	.35	.10	.38	.84

*** $p \leq .001$, ** $p \leq .01$, * $p \leq .05$, † $p \leq .1$
Unstandardized coefficients shown.

CONCLUSION

In our sample affective sentiments vary among groups types, whereas group perceptions are much more dependent on the type of group. Yet affective sentiments relate to these group perceptions in meaningful ways and these group perceptions themselves predict important group interaction processes such as stereotyping, biases, joining groups, and interpretation of member's actions. Therefore, we join others (Scholl 2013) in concluding that the sentiments of evaluation, potency, and activity apply across many domains, specifically to groups. Because of this finding, we advocate that ACT, built on these affective dimensions, can be applied to cases where groups are actors and object-recipients in social interaction.

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APPENDIX A: GROUP PERCEPTION QUESTIONS

	Question	Scale Low Endpoint (-4)	Scale High Endpoint (+4)
Entitativity	Some groups have the characteristics of a 'group' more than others do. To what extent [does/do] [concept] qualify as a 'group'?	Not at all	Completely
Homogeneity	Overall, how similar are [members of] [concept] to each other?	Not at all similar	Extremely similar
Essentialism	Some groups are more natural than others, whereas others are more artificial. Where would you place [concept]?	Artificial	Natural
Agency	To what extent can [concept] make things happen (e.g., produce outcomes)	Not at all	Completely

All questions taken from Spencer-Rodgers, Hamilton and Sherman (2007: study 2).

APPENDIX B: GROUP TYPE, AFFECTIVE SENTIMENTS, AND GROUP PERCEPTIONS BY CONCEPT

	Group Type(s) ^a	Evaluation	Potency	Activity	Entitativity	Homogeneity	Essentialism	Agency
An Angry Mob	A	-2.70	2.18	3.09	2.15	1.22	0.25	1.95
A Book Club	P/T	2.01	-0.70	-1.99	2.19	1.06	0.69	-0.71
Californians†	C/A	0.73	0.78	0.99	0.84	-0.22	0.27	0.89
A Cast of a Play†	P/T	1.85	0.75	1.42	2.48	1.10	-0.33	1.41
Chess Tournament Competitors	A	1.44	0.97	-1.69	0.65	1.11	-0.22	0.24
Classmates	P	1.00	0.37	0.69	1.31	-0.36	0.42	0.84
A Club Sports Team	P/T	1.27	1.51	2.03	2.33	1.33	0.46	1.57
A Crowd	A	-0.09	1.15	1.86	0.87	-0.65	0.65	0.98
A Cult	P/T	-2.31	1.20	0.70	2.47	2.30	-1.33	0.62
A Customer Service Department	C	0.75	0.24	0.70	-0.02	-0.24	-1.89	1.02
Elderly People†	C	1.63	-1.46	-2.28	1.49	0.22	2.38	0.35
Elementary School Students	C/A	1.90	-0.81	2.75	1.75	0.60	1.98	-0.18
An Environmental Organization†	T	1.91	1.20	1.24	1.74	1.62	0.17	1.69
An Estranged Family	P	-0.42	-1.19	-0.81	-0.59	-0.21	0.76	-1.52
Estranged Friends	P	-0.79	-0.87	-1.22	-2.22	-1.46	-0.96	-1.67

A Family	P	2.16	1.45	1.16	3.06	1.96	3.32	2.21
Fast Food Servers	T/C	0.86	-0.85	1.42	0.06	-0.21	-1.08	0.42
A Firing Squad	T	-1.90	2.53	2.48	0.96	0.29	-1.82	2.61
A Fraternity*	C/A	-0.29	0.67	2.31	2.64	2.04	-0.58	1.09
Fraternity Brothers*	P	-0.56	0.92	2.08	2.51	1.93	-0.16	1.16
Friends	P	2.23	1.29	0.98	2.26	1.30	2.11	1.70
Funeral Mourners	A	0.99	-0.90	-1.91	0.17	0.23	0.98	-1.04
Hispanics/Latinos†	C	1.27	0.49	0.87	1.65	0.89	2.14	1.38
Hoarders	C	-1.10	-1.87	-1.65	0.02	1.26	0.05	-1.79
Human Rights Activists	T/C	1.31	1.63	2.24	2.21	1.72	0.92	1.90
A Hung Jury	T	-0.58	-0.56	-1.34	0.73	-2.02	-1.58	-0.95
An Infant Playgroup	P	1.91	-1.90	1.90	1.14	1.30	0.70	-1.84
Intellectuals	C	1.53	1.57	-0.15	0.61	0.37	0.88	1.92
Internet Bloggers	C/A	0.16	0.47	0.34	0.09	-0.61	-1.28	0.37
Internet Stalkers	C	-2.30	-0.16	-0.66	-0.03	0.87	-1.26	-0.13
Jews†	C	1.44	1.07	0.29	2.30	0.55	2.32	1.62
A Jury†	T	1.03	2.44	-0.84	2.17	-0.67	-1.02	2.91
Juvenile Delinquents	C	-1.80	-0.56	1.88	0.49	0.23	-0.09	-0.77
Meth Addicts*	C	-2.06	-2.31	1.10	0.37	1.19	-0.96	-2.10
A Meth Lab Group*	P-T	-2.59	0.07	1.24	-0.16	1.22	-1.69	0.53
A Needy Family	P	0.65	-2.01	-0.51	0.75	1.11	1.81	-1.36
Newborns	C	1.97	-3.02	-0.43	0.22	1.35	2.32	-2.19
Night Security Guards	T/C	1.25	0.86	-0.65	-0.13	-0.02	-0.43	0.79
Nursing Home Patients	C/A	1.42	-2.22	-2.61	1.18	0.88	0.57	-2.00
A Political Party	C/A	-0.68	2.24	1.44	2.74	1.95	-1.00	2.24
Prison Cellmates	P	-2.08	-0.65	1.10	0.84	0.69	-0.98	-1.33
A Prison Work Team	T	-0.77	-0.53	0.93	1.55	0.33	-1.00	0.65
Protesters	A	0.48	1.48	2.28	1.93	0.90	0.55	1.23
A Quilting Group	P/T	1.88	-0.76	-1.58	1.67	1.52	0.94	0.50
Referees	T/C	0.70	1.76	1.54	0.91	1.07	-0.40	2.21
A Rioting Crowd	A	-2.40	2.02	2.81	1.77	1.11	0.11	1.81
A Role Playing Group	P/T	1.49	-0.02	0.54	1.63	1.15	-0.98	-0.38
Sales Associates	T/C	0.38	-0.03	1.47	0.27	0.12	-1.06	0.81
Scrooges	C	-2.11	0.42	-0.64	-1.17	0.83	-0.40	-0.46
Senior Citizens	C	1.88	-0.89	-2.33	2.02	0.87	2.57	0.40
A Sex Trafficking Ring	T	-3.41	2.05	1.01	1.03	1.00	-2.03	1.33
A Soup Kitchen Line	A	1.44	-0.37	0.30	-0.23	0.36	0.39	-0.23
A Sports Team	P/T	1.33	1.86	2.59	2.86	1.46	0.27	2.22
Strip Club Customers	A	-1.10	-0.71	0.95	-0.63	0.65	-1.43	-1.54
A Student Campus Committee†	T	1.45	1.18	1.39	1.82	0.90	-0.28	1.59
A Suicide Cult	P/T	-2.96	0.02	-0.25	1.75	1.57	-1.70	0.88
Telemarketers	T/C	-2.01	-1.30	1.65	0.55	0.48	-2.10	-1.03
A Terrorist Cell*	P/T	-3.18	1.24	1.13	1.75	1.13	-1.25	1.31
Terrorists*	C	-3.21	1.39	2.17	1.47	1.48	-0.74	2.12
A Theater Audience	A	1.05	-0.06	-1.07	-0.27	-1.19	-0.77	-1.23

An Unknown Rock Band	P/T	0.23	-0.49	1.86	1.96	1.26	0.06	-0.34
A Videography Team	T	1.13	0.52	0.80	1.10	0.90	-0.55	1.71
A Volunteer Group	T	2.46	1.16	0.87	2.35	1.21	0.70	2.57
Walmart Greeters	T/C	1.72	-1.37	-0.89	-0.34	0.20	-1.28	-1.56

^a *P = Primary, T = Task, C = Categories, A = Associations/Collectives*

* *By using slightly different terms, we were able to differentiate small primary groups (i.e., Fraternity Brothers, A Meth Lab Group, A Terrorist Cell) from the larger categories (i.e., A Fraternity, Meth Addicts, Terrorists).*

† *From Spencer-Rodgers et al.'s (2007) Study 2.*

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