

# Mediators, Regulators, and Catalyzers: A Context-Inclusive Model of Trajectory Development

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Human existence is a cultural existence. The cultivation of human-lived-in worlds is made possible through the use of semiotic mediators—general intra-personal or inter-personal devices used to relate with the world. Semiotic mediators are of two kinds—*semiotic regulators* and *semiotic catalyzers*. Semiotic catalyzers provide the conditions necessary for the operation and employment of semiotic regulators. Semiotic regulators actively and directly act on ongoing psychological processes through inhibiting or promoting their continuation and development. The concept of the catalyst is useful in demonstrating how semiotic regulators succeed (or fail) in charting out new trajectories in human development. The conceptual separation of catalyzers and regulators among semiotic mediators provides fruitful ground for alternative epistemology that is a representation of systemic, context-inclusive model of human functioning that transcends the hegemonic perspectives of reduction of complexity to complexes of “variables” treated as causal entities.

*“Experiences point both backward and forward: back to a more primal (perhaps the most primal) state of consciousness; forward to new levels of integration and transformation by recreating the milieu which is the psychological catalyst of transformation.”* (Jones, 2002, p. 89)

In his article on Victor Frankl and Sigmund Freud, Hatala (2010) asks the question: “What factors—historical, developmental, socio-political, cultural or otherwise—came to influence Frankl and Freud’s psychological ideologies and persuade their movement in one trajectory or another” (p. 1)? Hatala suggests that the trajectories of theoretical ideologies are influenced by (and in dialogue with) the broader (global) socio-cultural conditions as well as the more specific (local) conditions of their inventor. The common factor under the analytical lens is the study of *the conditions under which something occurs*—the context-inclusiveness of human development. The development of any psychological phenomena is interrelated with the condition from which it emerges—the “milieu” as identified in the quote above by Jones. Consequently, it seems fitting to delve deep into the study of the conditions—or milieu—necessary for the construction and regulation of psychological phenomena through the inquiry and investigation into the catalyst.

## THE CATALYTIC CONDITION

It is natural for the person to attempt to make sense of the world that encompasses them. Making sense is a central human psychological process by which the person relates to their environment. However, “making sense” is an active and constructive process by which the person cultivates their self and environment. Consequently, the person, as a semiotic actor, relates with the world through semiotic (that is, cultural) mediation. Semiotic mediation is a general term for various semiotic devices that allow the person to cultivate and actively

modify the life space. Semiotic mediators can functionally be differentiated into two types of devices: (1) semiotic catalyzers and (2) semiotic regulators. Semiotic catalyzers provide the conditions necessary for other mediation processes (such as semiotic regulation). Catalyzers provide the directional flavoring that support—but do not act directly on—the enablement or disablement of ongoing psychological processes. Therefore, the semiotic catalyzer is in the background providing the support for the direct and active operation and employment of semiotic regulators (and other mediating devices). Semiotic regulators are intra-mental devices that are actively and directly used on the ongoing psychological processes (ie, the affective sign of disgust regulating Anna O.'s ability to drink when thirsty—See Cabell & Valsiner, in press). Semiotic regulators can also be extra-mental devices that are actively and directly used to cultivate the personal-cultural or the collective-cultural field (ie, symbolic resources—see Zittoun, 2006). The support given by semiotic catalyzers—for the enablement or disablement of ongoing psychological processes—are directly acted upon by semiotic regulators. The semiotic regulator can directly act on psychological processes by promoting or inhibiting its continuation. Therefore, *semiotic catalyzers provide for the contextual support for the immediate or future action of the semiotic regulators.*

### **The Various Forms of Semiotic Catalyzers**

The presence of a semiotic catalyzer—a catalyst—in the psychological system can take the form of a point-like sign, a field-like sign, or a hypergeneralized sign (Valsiner, 2007, p. 47-52) (See Figure 1). Catalytic processes introduce one (or more) meaning(s)—via a point-like sign, field-like sign, or hypergeneralized sign—into the psychological system that provides the contextual conditions necessary for twofold: (1) the construction and production of novel phenomena from the (2) direct and active regulation—both promotion and inhibition—of psychological processes (Cabell, in press). The promoting process of semiotic regulation is a guiding function that provides the “acceptable” range of possible future-oriented constructions. The inhibiting process of semiotic regulation is a guiding function that excludes the unacceptable range from possible future-oriented constructions. Both regulatory functions are future-oriented and feeling-forward functions of the semiotic mind, essential for “*constantly creating meaning ahead of the time [from] when it might be needed*” (Valsiner, 2007, p. 58). Catalytic processes provide the contextual and conditional support by which semiotic regulators can act on ongoing psychological processes in a particular way in order to produce novel phenomena.

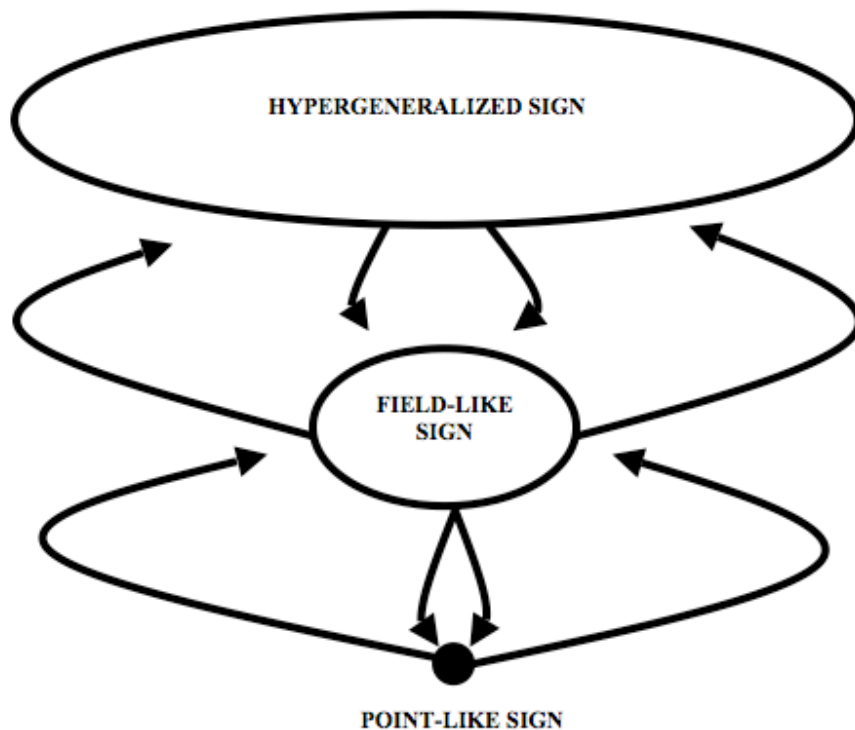


Figure 1. *The relationship between a point-like sign, a field-like sign, and a hypergeneralized sign*

### ***Point-like catalysts***

Point-like signs are static and stable conceptions/representations of something. The most common example of a point-like sign is a word, for example, the word “table” (Abbey & Valsiner, 2005, para. 8). Therefore we can identify the presence of a catalyst in the form of a point-like sign by a particular word that provides the conditions necessary for regulated change. Take this example given by Sherif (1936):

*Present freshly boiled pork chops to two hungry men. One of our hungry men is a Mohammedian whose religion tells him that anything connected with pigs is disgusting—this is an established taboo, a norm. The other person is a Christian. He will seize the chops and eat them with gusto. The first person will not only not touch the chops, he will be filled with disgust for them and for the person who eats such filthy things. (p. 28)*

But in order to understand the workings of a catalyst as a point-like sign, a modification is needed:

*The example could be even more powerful, if we turn it into a microgenetic framework and assume that both protagonists did not know from the very beginning that “this meat” is pork. It is just meat, and both enjoy it. Only after some time the first person happens to find out or is told that this meat is pork. Here we could potentially observe the immediate power of the semiotic organizer “pork”—a psychological catalyst which completely and irreversibly transforms the whole feeling field (related to the food and generalizing to the dinner companion) from appreciation into disgust. (Josephs, 2007, p. 322)*

The point-like catalyst “pork” provides the conditions necessary to transform the entire feelings field. This is true of any person whose faith excludes the eating of substances of some kind. The semiotic catalyzer—“food X”—provides the contextual support—“I cannot eat X because it is disgusting”—necessary for the direct regulation—by promoting and inhibiting—by the regulator—*affective disgust*—to produce a novel phenomena—Feelings that “I am disgusting” and “My dinner companion is disgusting” (see Table 1).

*Table 1. Catalytic Transformation in the Construction of Food.*

<b>Catalytic Model</b>	<b>Food In General</b>	<b>This Food Here And Now</b>
<i>Previous Condition</i>	Food Y is Satisfying	This Meat is Satisfying
<i>Previous Mediation</i>	I Enjoy Eating Y	I Enjoy Eating this Meat
<i>Catalyst</i>	The Word “Food X”	The Word “Pork”
<i>Condition</i>	“Food X” is Disgusting	“Pork” is Disgusting
<i>Regulator</i>	Affective Field - Disgust	Affective Field - Disgust
<i>Regulation</i>	Regulation of feeling field	Promoting Generalized Disgust
<i>Phenomena</i>	I Disgust Myself and I am Disgusted by Other	I Disgust Myself and I am Disgusted by Other

When the person is told that “unknown food”—which elicits no affective response, only physiological satisfaction and good taste—is actually “food X”, the introduction of the word elicits an affective response of disgust and the possibility of a physiological response to go vomit. Therefore, the word as a point-like sign provides the conditions necessary to regulate and transform the individuals relating with the world. The person regulates their relating to the world through semiotic regulation--promoting disgust for the meat, and disgust for those who ate it (self and dinner companion)—by the semiotic regulator—the affective field of disgust. The meaning “*this is meat*” does not—by itself—*cause* the negative affective reaction, but creates the context within which such outburst can occur. The person navigates the world by inhibiting contact with the meat, and possibly with the dinner companion as well. The transformation of the meat and the dinner companion as “disgusting” can also lead to novel phenomena, such as never eating with the dinner companion again, or the beginning of the end of their friendship, etc.

### ***Field-like catalysts***

Field-like signs are mental conceptions/representations structured in space and time and represent through the embeddedness of something in relationship to its (spatio-temporal) environment. For example, the notion of “identity” can be viewed not as an entity (“I am X”) but as a field-like sign through which catalytic processes can take place. O’Sullivan and Abreu (2008) discuss the societal-level processes of the dialogical self by analyzing two case studies of Irish nationals. O’Sullivan and Abreu (2008) point out that a cultural contact zone and the resulting cultural changing causes a systemic break in cultural identity and continuity. The result is uncertainty and ambiguity related to the future for the individual and the future for the society. It is here where O’Sullivan and Abreu conceptually allude to, but do not mention, the insertion of a catalyst. It is at this point of ambiguity and future uncertainty that the catalytic I-position “I as an Old Irish Person” allows for the conditions necessary to directly regulate—via promoting and inhibiting—the transformation in the interpretation and meaning of the changing culture around them. For example, Dermot’s use of the constructed catalytic I-position “I as an Old Irish Person” resulted in the reflection:

*(1) When I think of Irishness, I mean the Ireland I grew up in was the Ireland of the Eighties and (2) I guess everyone knew each other; (3) no one had very much advantage over the other. (4) I enjoyed the Eighties even though we had nothing but (5) it was very much a helping, you know, friendliness (6) that has just stopped existing, that has stopped existing... (7) I think what’s happened now is that the differences are getting stretched out and (8) people are classifying themselves according to a new spectrum... (O’Sullivan and Abreu, 2008, p. 47)*

This small excerpt from Dermot’s reflection illustrates that using a catalytic I-position can provide the necessary conditions to regulate and reconstruct the self in relationship to the environment. The semiotic catalyzer—“I as an Old Irish Person”—provides the contextual support—“older times”—necessary for the direct regulation—by promoting and inhibiting—to produce a novel phenomena—feelings and thoughts of authenticity, community, equality, poverty, selfishness, dividedness, competitiveness, related to identity (As Identified by O’Sullivan and Abreu, 2008, p. 47).

By using semiotic catalyzers in conjunction with semiotic regulators, a novel understanding of identity begins to emerge. For one, the idea of identity as a field-like sign means understanding identity as a mental conception/representation of the self structured in space and time and represented through the embeddedness of self in relationship to its (spatio-temporal) environment. Also, the idea of identity can move away from the essentialistic-causal notion (“I do X because I am Y”), and more towards the systemic-condition notion (“I as X provide the conditions necessary to regulate myself as A, B, and C”).

## ***Hypergeneralized catalysts***

Hypergeneralized signs allow for symbolic generalization and symbolic linkages with the indefinite and indefinable (Valsiner, 2007, p. 51-2). They provide a representation of the totality of life experiences in a form that is overwhelmingly indefinable, and yet actively operating (and many times regulating) in the psychological functions of the individual (Cabell & Valsiner, in press). A catalyst as a hypergeneralized sign would be the notion of *faith*. Beckstead (in press) comments on the internal and external catalysts functioning in the symbolic setting of pilgrimages by suggesting that,

*The internal catalyst for the pilgrim is the internalized and subjectively powerful notion of faith. This is not only a theological concept, but also a deeply felt value suggestive of things held in high regard. Not necessarily opposed to reason, faith may be difficult to articulate. Faith is related to belief—either of the magical realm or absolutely rational and scientific—and organizes our relating to the world. Indeed, it is internalized faith that frames the meaning derived from the natural and man-made landscapes as well as symbolic objects. Sand, trees, rivers, and objects are transformed or apprehended as far from ordinary.*

*Faith* is a hypergeneralized sign—affectively felt and future-oriented. Faith is hard to describe and words used to describe it like “*trust*” and “*belief*” are generalized categories of feelings that are extracted characteristics of faith, but they do not encompass faith as a whole<sup>1</sup>. Despite its indescribable qualities, faith transforms our interpretation of the phenomena in the world around us. Faith—as a catalyst—provides the conditions necessary to regulate our thoughts and behaviors through regulators that promote confidence and trust in the belief of a higher order for future outcomes in life (whether that higher order is religious, scientific, or otherwise). Alternatively faith provides the conditions necessary to regulate our thoughts and behaviors through regulators that inhibit feelings of ambiguity and uncertainty. Take the real life example portrayed in the writings of Victor Frankl when reflecting upon life in the concentration camps:

*If a prisoner felt that he could no longer endure the realities of camp life, he found a way out in his mental life an invaluable opportunity to dwell in the spiritual domain, the one that the SS were unable to destroy. Spiritual life strengthened the prisoner, helped him adapt and thereby improved his chances of survival. (Frankl, 1997, p. 123—in Hatala, 2010, p. 16)*

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<sup>1</sup> Faith—as a hypergeneralized affective sign—cannot be described and yet makes a person still feel strongly in a particular way. However, because it cannot be described in its totality—only felt as such—we must extract from our feelings certain fuzzy characteristics that help us identify what it is we are feeling. Our extraction from the feelings of faith is on a less generalized/abstracted level—a level of generalized categories of feeling. Therefore in the process of explaining faith, we must deconstruct our hypergeneralized feelings and construct generalized feeling identifiers. We can deconstruct even further to specific emotion terms on an even lower level of generalization and abstraction if needed (For a general model see Valsiner, 2007, p. 312).

*The consciousness of one's inner value is anchored in higher, more spiritual things, and cannot be shaken by camp life.* (Frankl, 1984, p. 83—in Hatala, 2010, p. 16).

The inner value discussed here by Frankl is an internalization of the hypergeneralized catalyst faith—the “spiritual domain”. Faith as a catalyst provided the conditions necessary to muster the strength to carry on despite intensive suffering. The catalytic conditions provided by faith allow the person to adapt to their surroundings by having confidence and trust in a positive future outcome. It is through the catalyst “faith” and the conditions provided by it that allows for the direct semiotic regulator (“I have a reason to live”) to promote adaptation and survival while inhibiting growing thoughts or feelings that would undermine camp survival.

### **SEMIOTIC CATALYZERS IN THE TRAJECTORY EQUIFINALITY MODEL**

Developmental and dynamic models of psychological phenomena must consider transformation over time. Classic psychological theorists, although considering the mind as both developmental and dynamic, studied transformation over time through static and classificatory models. Each stage theorist included in their stages different developmental milestones that would emerge or vanish through time. Therefore the classic psychological theorists intuitively knew that the mind and its psychological functions transform—or develop—over time, but did not use theoretical models that conveyed this knowledge.

More recently, methodological and theoretical models have been constructed to portray the developmental dynamics of psychology. The Trajectory Equifinality Model—or TEM—is a theoretical and methodological tool that organizes—by mapping out—human-lived-through experiences over time (Valsiner & Sato, 2006; Sato et al., 2007). The synthesis of the past, present, and future as well as the unification of real and possible trajectories within one model provides a fruitful understanding for psychological processes (See Figure 2). However, it is key to focus on the emerging differentiation at the bifurcation points. It is necessary to consider the semiotic catalyzer that provides the conditions necessary for the regulation that leads to the actualization of one trajectory over the equally potential future trajectories.

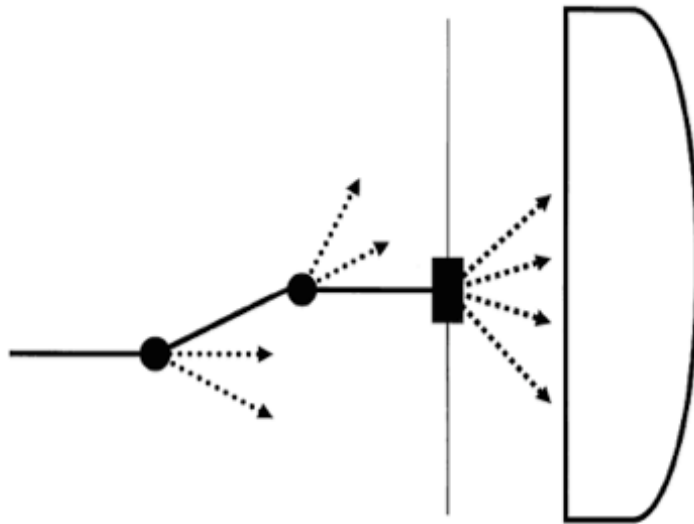


Figure 2. Trajectory Equifinality Model

### Trajectory Equifinality Model (TEM)

The Trajectory Equifinality Model is a temporal model incorporating the duration of trajectories and their development through the past, present, and continuing into the future. The model illustrates a unilinear actualized trajectory from the past up until the present. This highlights the path of development the phenomena took—its historicity. The model also juxtaposes the unilinear actualized trajectory with the potential trajectories that were not actualized at past bifurcation points. The present-to-future orientation illustrates various equally potential trajectories that can become actualized. The Trajectory Equifinality Model is also beneficial in that it incorporates the study of the not-yet-existent but imagined potential future trajectories for development (See Figure 2). Using TEM requires the following steps (Sato et al., 2009, p. 233):

- A) *Locating the relevant equifinality point (EFP)—as well as all relevant OPPs—in the generic map of trajectories necessarily present for the generic system of the processes under investigation (theoretically based activity),*
- B) *Empirical mapping out all particular cases—systems open to study that move through these points, and*
- C) *Comparison of different actual trajectories as these approach to the equifinality point by superimposing onto each trajectory a pattern of theoretically meaningful “range measure”—derived from (A)—that specifies whether the given trajectory fits into the realm of selectable cases.*



Despite the models fruitful method for studying phenomena—actualized or potential--“as-they-were” to “as-they-are” to “as-they-will-be”, the model is missing the study of the emerging phenomena from the present into the future—the phenomena’s *emerging differentiation* (Valsiner, 2009). Therefore, a fourth step should be included into the use of TEM that addresses the question: what influences the present-to-future development of one particular trajectory over another?

### **Catalysts in the Trajectory Equifinality Model**

The synthesis of semiotic catalyzers and the Trajectory Equifinality Model began from the attempt to construct an alternative to the isomorphic variable causality from which psychology is suffering. Rather, *generalization should be based on the development of phenomena over time and the systemic conditions under which they occur* (Beckstead, Cabell and Valsiner, 2009). Therefore, the synthesis of such models are important for future epistemological investigations.

Conceptions of time—past, present, and future—bring to the psychological lens the developmental notion of transition, emergence, and becoming. As the individual develops with time, they have a unilinear actualized past trajectories, multiple potential past trajectories, and multiple future potential trajectories. The individual, however, will always remain in a perpetual state of transition, emergence, and becoming because the individual is always on the precipice of the past and of the future—in the infinitesimal present.

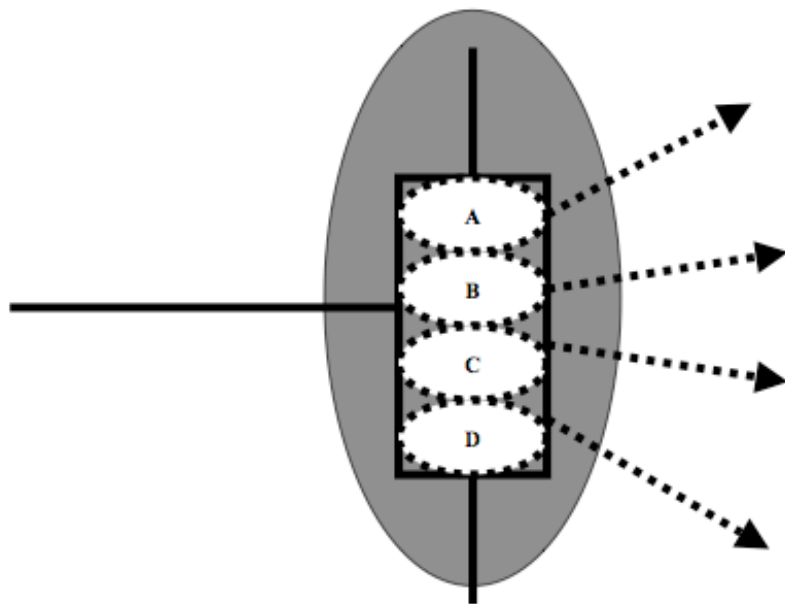
The constant flow of experience of the present-becoming-future will eventually hit a bifurcation point—a point at which multiple equally potential future trajectories exist (See Figure 3.1) <sup>2</sup>. Since each future trajectory is equally potential, there must be certain conditions under which each trajectory is actualized over the other. Consequently, the actualization of potential trajectory is influenced by one (or more) catalyst(s) present within the system. The catalyst can already exist within the psychological system (internal catalyst), or may be inserted—via internalized—into the psychological system (external catalyst).

The presence of the catalyst provides the contextual support for the immediate or future action of the semiotic regulators resulting in the actualization of one trajectory over the others. The conditions and contextual support of the catalyst allow for employment of the semiotic regulation—through promoting and inhibiting—the process of emerging differentiation (See Figure 3.2).

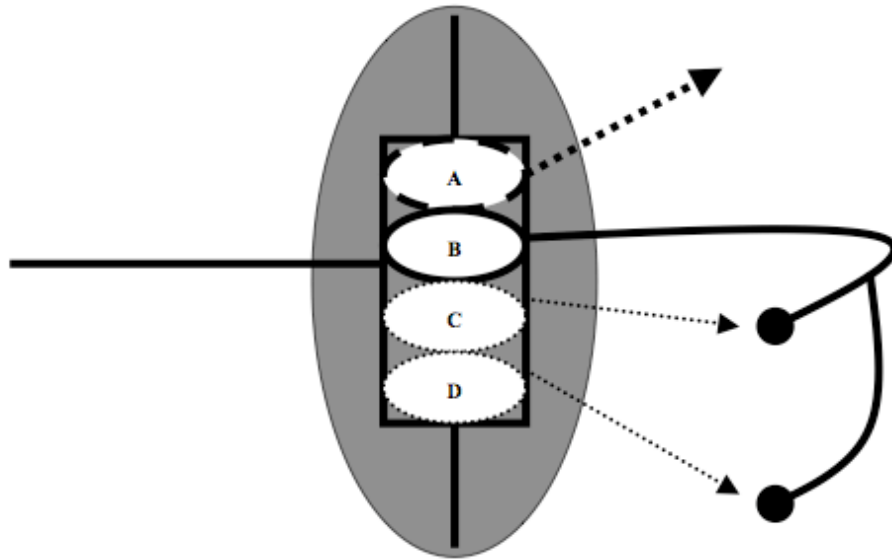
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<sup>2</sup> It is important to identify all the parts in the scheme of the catalytic effects on emerging differentiation. The solid line represents a unilinear actualized past—a phenomena’s historicity. The square box is the bifurcation point. The dotted lines from the bifurcation points are potential trajectories. The dotted shapes within the box are semiotic devices that can actualize as regulators to affect trajectory development. The grey oval in the background that encompasses all the parts is the semiotic catalyzer. This grey area represents the conditions necessary for the emerging differentiation process. As dotted lines become more solid, they become more actualized. As dotted lines become smaller and have more dots, they are vanishing potential trajectories.

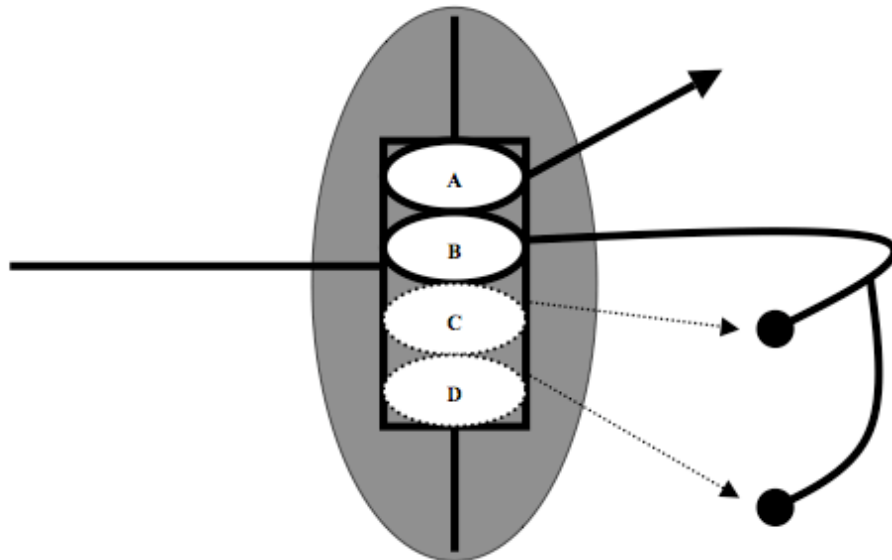
The to-be-actualized trajectory is promoted through the use of a semiotic regulator employed by the catalytic conditions. The other potential trajectories are inhibited from actualization through the use of another semiotic regulator employed by the catalytic conditions. The result of the catalyst is (and the catalytic conditions are) an emerging differentiation between trajectories—various emerging-potential-but-vanishing trajectories and an emerging-potential-but-actualizing trajectory. The catalyst provides the conditions necessary for the semiotic organization and semiotic regulation of trajectories at the bifurcation point (See Figure 3.3). Consequently, catalysts provide the contextual support for the semiotically mediation mechanism to act as a bifurcator—the differentiating, distinction-making, regulatory operators of development.



*Figure 3.1.* Catalytic effects in emerging differentiation of trajectory development



*Figure 3.2.* Catalytic conditions provide semiotic regulation in emerging differentiation of trajectory development



*Figure 3.3.* Catalytic conditions provide semiotic regulation for actualization of one trajectory

### Example: The Psycho-Social Transformation of Group Norms

The proliferation of semiotic catalyzers in the construction of group norms has already been illustrated with Sherif. However, the construction of group norms in the case of Festinger et al (1956) exemplifies the role of the catalyst within the Trajectory Equifinality Model. In the study done by Festinger et al (1956), a cult was preparing for the end of the world, which was declared by the cult leader. The cult—those “chosen” to be saved before the end of the world—developed the social norm (and expectation) to prepare for the end of the world. What are most interesting are the events that took place immediately after the expected end of the world failed to come. The disconfirmation of the social norm/expectation—through the passing of dooms-day without the end of the world—actually fortified the norm.

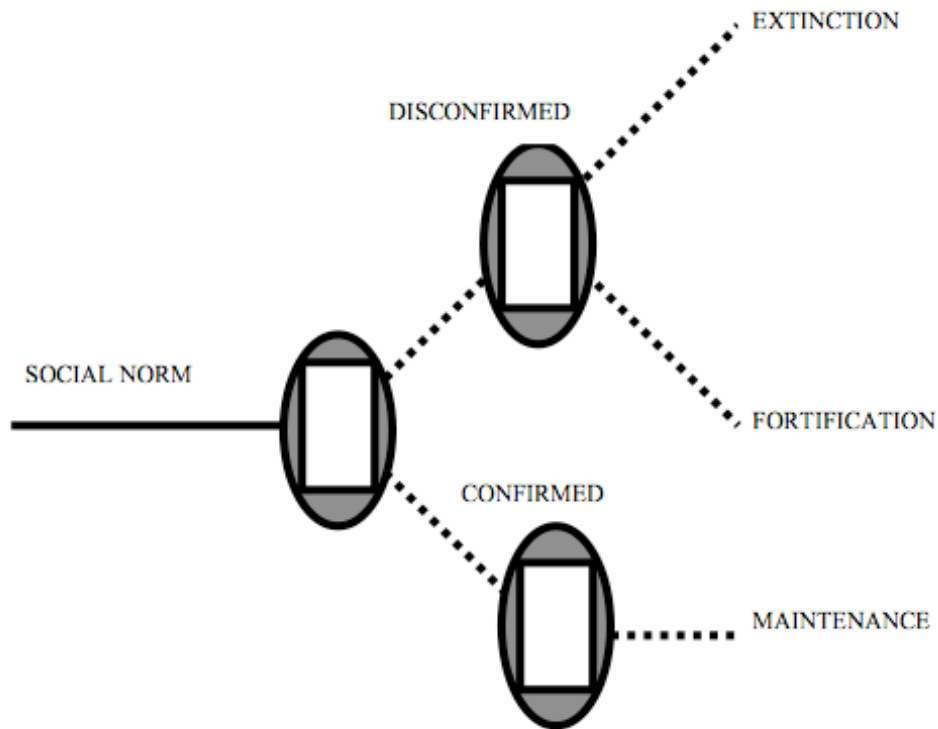


Figure 4. Catalysts in the trajectory development of social norm transformation

Modifying Valsiner’s (2007, p. 39) theoretical model of social norm transformation, we can chart out Festinger’s findings—transformation of social norm from disconfirmation to fortification—on to the Catalytic Trajectory Equifinality Model (See Figure 4). The presence of a catalyst at the bifurcation point provides the conditions necessary to enable a direct challenge of the social norm. The first regulator directly and actively challenged the social

norm. Another regulator that either promotes or inhibits the social norm will supercede the first regulator. If the superceding regulator promotes the social norm, it will be confirmed, resulting in the maintenance of the norm. If the superceding regulator inhibits the social norm, it will become disconfirmed (See Table 2).

Table 2.

*Semiotic Catalyzers and Regulators in the Confirmation or Disconfirmation of Social Norms*

<b>Catalytic Model</b>	<b>Confirmation</b>	<b>Disconfirmation</b>
<i>Unilinear Actualized Past</i>	X is the Current Norm	X is the Current Norm
<i>Catalyst</i>	Catalyst Y	Catalyst Z
<i>Condition</i>	Conditions For Challenge	Conditions For Challenge
<i>Regulator 1</i>	Regulator A Challenges	Regulator A Challenges
<i>Regulator 2</i>	Regulator B Promotes Norm	Regulator C Inhibits Norm
<i>Actualized Trajectory</i>	Norm Becomes Confirmed	Norm Becomes Disconfirmed

If the catalyst provides the conditions necessary to enable a challenge resulting in disconfirmation of the social norm, the development of the psycho-social system will reach a new bifurcation point with two more trajectories: fortification of the norm or extinction of the norm. Both potential trajectories share the same unilinear actualized past—X is disconfirmed. In the case of fortification, the catalyst of generalized belief produces the conditions necessary to confirm the group norm. The catalyst of generalized belief that confirms the group norm is supportive of the regulator, “I want to believe in the group norm”, which will promote the norm, resulting in its fortification. In the case of extinction, the catalyst of generalized non-belief with provides the conditions necessary to disconfirm X. These catalytic conditions are supportive of the regulator “I don’t care about X”, which in return inhibits the group norm resulting in the extinction of the group norm (See Table 3).

Table 3.

*Semiotic Catalyzers and Regulators in the Fortification or Extinction of Social Norms*

<b>Catalytic Model</b>	<b>Fortification</b>	<b>Extinction</b>
<i>Unilinear Actualized Past</i>	X is Disconfirmed	X is Disconfirmed
<i>Catalyst</i>	Generalized Belief	Generalized Non-Belief
<i>Condition</i>	Conditions Confirm X	Conditions Disconfirm X
<i>Regulator</i>	“I want to believe in X”	“I don’t care about X”
<i>Regulation</i>	Promoting Norm	Inhibiting Norm
<i>Actualized Trajectory</i>	Norm Becomes Fortified	Norm Becomes Extinct

A catalyst provides the conditions necessary for the actualization of one trajectory over the others in the case of confirmation <> disconfirmation and in the case of fortification <> extinction. The conditions necessary for actualization of one trajectory over the other are supportive of semiotic regulation—through promoting and inhibiting—the emerging differentiation of trajectories. Consequently both semiotic catalyzers and semiotic regulators are necessary for the bifurcation process in trajectory development.

## CONCLUSION

The fluidity of the dynamic human-lived-through experience can be intra-personally or inter-personally encoded into many semiotic forms. Each semiotic form is not mutually exclusive but rather entails various levels of abstraction/generalization. For example, a point is a constricted field and a field is an expanded point. Consequently, each semiotic form represents the human-lived-through experience in a different way. However, despite different representations at various levels of abstraction/generalization, each sign still has a catalytic potential. It is the function of semiotic catalyzers to provide the necessary conditions and contextual support—to “set the stage”—for the use of semiotic regulators. Semiotic regulators directly and actively regulate the phenomena through promoting and inhibiting functions. The results of these systemic-conditional interactions are the construction of novel phenomena.

The psycho-semiotic processes of catalysis are influential in the development of phenomena overtime. The use of semiotic catalyzers in the Trajectory Equifinality Model provides a fruitful ground to understand the trajectory development at any given bifurcation point. The trajectory development of psychological phenomena includes that of beliefs and theoretical ideologies. Hatala (2010) alludes to local and global catalysts—providing the conditions necessary for growth and development of particular theoretical ideologies. This point is best described by Umberto Eco (1979, p. 289):

*In this sense the ideological background on which the interpreter relied in order to disambiguate the sentence was reached through a complex interference, involving a series of presuppositions about the sender or the object of the sentence. Detection of the speaker's world vision depends on a process of interpretation rather than on previous codes. Thus ideology would appear to be an extra-semiotic residue which is able to determine semiotic events, acting as a catalyst in many abductive processes, but which escapes cultural coding.*

By understanding catalysis—processes of cultural organization—the field of psychology can better understand complex phenomena that occur under the systemic conditions of the intra-personal (psychological) and inter-personal (social) domains.

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