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On the cognitive status of mental spaces and of some types of metonymy within Conceptual Integration Theory

In the light of the automatic nature of the process of conceptual integration we examine the cognitive-conceptual status of the four types of mental spaces and their elements: the input spaces, the generic space and the blend. On the basis of the differences obtaining between the four types of mental spaces we divide them into defocused, highlighted and focal mental spaces. We further discuss the place and manner of intepretation of two basic types of metonymy in the context of blending theory and propose the introduction of a fifth mental space where such metonymies would be interpreted, namely the *pre-input spaces* in the case of non-metaphoric counterfactuals, or the *pre-target space* when metonymy operates within a metaphoric utterance.

Keywords: basic model of conceptual integration; input spaces; generic space; blend; elements of mental spaces; defocused, highlighted and focal mental spaces; pre-input spaces; pre-target space; metaphor; metonymy.

1. Introduction

The theory of conceptual integration has flourished over the past ten years mostly due to the efforts of G. Fauconnier and M. Turner (Fauconnier-Turner 1996, 1998, 1999, 2002; Turner-Fauconnier 1995, 2000). It has emerged as a

compatible refinement of Lakoff's Conceptual Metaphor Theory (CMT) as a standard two-domain account of metaphor focused primarily on mental representations, while Conceptual Integration Theory (CIT) is more focused on cognitive processes. Apart from that, CIT is broader in scope in that it tries to provide a framework not just for metaphor and metonymy, but also for analogy, counterfactual conditioning, and a host of other mental operations.

> Conceptual integration operates in many areas - everyday meaning construction, conceptual change, metaphor and analogy, scientific discovery, counterfactual reasoning, grammar, action and design. (Fauconnier & Turner 1999: 76).

It follows from the above that within the theory of conceptual integration metaphor interpretation becomes but a portion of the overall cognitive process and as such loses the primacy it has enjoyed in cognitive linguistics since early 1980s. In contrast to the two-domain model, Fauconnier and Turner set up the so-called multispace model which, in prototypical cases[1] includes the following spaces. First, there are *two input mental spaces* with their elements that roughly correspond, in the case of metaphor, to the source and target domains of CMT. Second, there is *a generic space*, which is a schematization of the commonalities obtaining between the input spaces. This generic space licences mappings between elements of the two input spaces in the case of metaphor; it allows for their common participation in the integrated space – the *blend* - in nonmetaphoric utterances. The blend is the fourth and the pivotal mental space in the theory of conceptual integration; it is the central mental space which captures the essence of the entire theory. This mental space is the locus of semantic and conceptual interpretation of utterances; it is a unit structured by its own logic and consists in a combination of elements from each input space and potentially of some new elements not contained in either input. The blend is a dynamic entity, it is open to various contextually-dependent interpretations, to various subconscious expansions of the basic conceptual structure, which is steered by individual knowledge and experience. Clearly, the CIT model prefers the notion of mental space to the classical notion of conceptual domains,[2] and defines the mental spaces as

[1] In this paper we shall not discuss more complex conceptual integration networks which, e.g. contain multiple blends, contain blends which may serve as inputs for further blends or complex networks containing the so called megablends etc. For a discussion of such and similar complex networks see Fauconnier & Turner (2002).

[2] It should be pointed out that the notion of domain is not really discarded since dynamic mental spaces derive their structure from more stable conceptual domains.

> small conceptual packets constructed as we think and talk, for purposes of local understanding and action...They are interconnected, and can be modified as thought and discourse unfold. Mental spaces can be used generally to model dynamic mappings in thought and language. (Fauconnier & Turner 2002: 40).

Mental spaces serve to combine elements that belong to different conceptual domains, tying them into homogenous and elastic, yet stable, conceptual frames. We understand the notion of elastic stability in terms of a stable basic conceptual structure which is subject to various elaborations under the impact of individual knowledge, experience and imagery which are imaginatively activated at a given moment of conceptualization. Cf. Fig. 1.

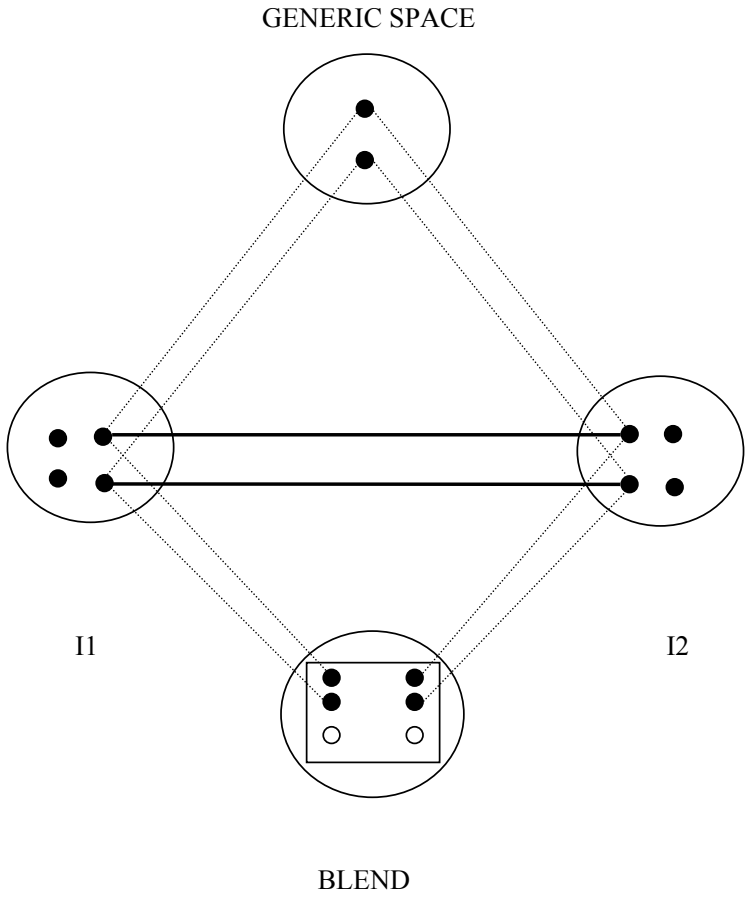

Fig. 1. Basic model of conceptual integration
(Fauconnier & Turner 2002: 46)

2. Discussion

This paper will address two issues which, in our opinion, merit more attention than they have received in the theory of conceptual integration:

A) the question of the cognitive status of individual mental spaces and their elements in the process of conceptual integration and, by extension, their representation in the conceptual integration diagram

B) the question of the relationships between two basic types of metonymy and input spaces in the process of conceptual integration

2.1. *The nature of mental spaces*

In an attempt to answer our first question and elucidate the status of individual mental spaces during conceptual integration, we move on to consider Fauconnier & Turner's well-known example of counterfactual[3] sentence (Fauconnier & Turner 2002: 225)

(1) In France, Watergate would not have harmed Nixon.

This example invites the hearer to create two input mental spaces. The first mental space, which is motivated by the story of *Nixon* and *Watergate*, also features the USA's geographical position and some elements of its political system – the president, the election system, American voters, congressmen, senators, the media etc. The second mental space is motivated by the adverbial *in France* and is structured by the knowledge of French geography and corresponding elements of the French political system. The generic space contains elements shared by both input spaces, in this case, according to G. Fauconnier and M. Turner (Fauconnier & Turner 2002: 226), it is the domain of Western democracy in which every country is headed by a president chosen by the people in democratic elections. The president is also head of a political party which enters into a race with competing political parties to gain leadership of the country. Further, the president's actions are limited by law and monitored by the public eye, whereby the public has the capacity to request impeachment should the president violate rules and limitations. Through a combination of individual elements from input spaces the brain sets up and activates a dynamic blend in which a situation

[3] Counterfactuals are one of the most frequently analyzed and the most interesting types of utterances in the CIT. They embody unlikely and impossible situations which open avenues of possibilities for the creation of blends, fostering the inventiveness and creativity of the human mind.

analogous to the Watergate scandal is located in France, but the potential French president does not suffer the fate that Nixon did in the USA. The reasons may be many, like e.g., no keen interest of the French voting public in political scandals, more lenient penalties for illegal actions during election campaigns, less scandal-seeking press etc.

The important questions we should now stop to ask are: Which mental spaces and which of their elements are in the focus of our consciousness, and which, on the other hand, are defocused and why? What is the cognitive status of the mental spaces at that very moment?

The basic diagram of conceptual integration shown in Fig. 1. only allows us to identify the blend as the primary mental space. The generic space and the input spaces, on the other hand, are represented as standing on an equal footing, which implies their conceptual equivalence and thus contributes to a neglect of their differences at the key moment of utterance interpretation, i.e. at the moment of creation of the blend. We strongly believe that a more detailed elaboration of the relationship between the cognitive status of mental spaces and the moment of utterance interpretation would enhance the explanatory power of the theory of conceptual integration. Thus we propose a division of the mental spaces and their elements into the following three groups:

(i) **defocused (shematic and non-shematic) mental spaces and defocused elements**
(ii) **highlighted (specific) mental spaces and highlighted elements**
(iii) **focal mental spaces and focal elements**

Let us first turn to the cognitive-conceptual[4] status of the generic space.

We do not aim here to question the status of the generic space as a schematization of the commonalities of the inputs, nor, from a purely theoretical perspective, its key role in the integration of elements from the input spaces; we simply want to look into its role and cognitive-conceptual value in actual communication.

The generic space together with its elements represents a defocused space because its conscious activation in on-line utterance interpretation takes extra cognitive effort. This is due to its schematic nature, i.e. the fact that it consists of

[4] We use the term cognitive-conceptual in the line with Ruiz de Mendoza and Peña Cervel's (2002: 139) distinction between the term *cognitive*, which refers to the dynamics of mental spaces, and the term *conceptual*, which refers to the result of such processes.

superordinate terms, of hyperonyms at the highest level of conceptualization in the taxonomic model of categorization. We are all familiar with the fact that terms superordinate to those on the basic level exhibit certain linguistic anomalies, like incomplete morphology, e.g. as manifested in their exhibiting single number categories or single gender categories, or their weak word-formation potential. Since human conceptual system, i.e. the conceptualization, representation, understanding and cognition of extralinguistic referents, strongly affects the language system (determining the composition, form and distribution of linguistic units, and not vice versa as had often been stressed in various structuralist approaches), such grammatical and word-formational anomalies exhibited by superordinate terms can be regarded as a direct consequence of their conceptual anomalies. These in turn come about as a result of our inability to conceptualize at highest levels of categorization. It is only the extremely abstract and general terms that operate on such conceptual levels. They are conceptually rather inaccessible terms that rarely if ever serve as 'vehicles' of neutral everyday communication. E. Rosch's (1975) and Rosch and Mervis's (1975) seminal papers and research have proved that communication operates on basic levels, as the last levels of conceptualization, since they maximize the number of relevant attributes common to members of a category, and minimize the number of attributes shared with members of other categories. This implies that we cannot e.g. think about *fruit* as *fruit*, but only of *fruit* as *bananas, apples*, *pears* etc. If, for example, we saw someone eating a strange kind of fruit and not knowing what it was we asked what they were eating, the term used in the answer would almost beyond doubt be represented at the basic level of categorization, e.g., *mango*. It is very unlikely that the person would say they were eating *a special kind of mango*, less so they were eating *fruit*. Also, in our *Nixon - France* example we cannot conceive of the country or the president as generic concepts, but on hearing the utterance our conscious mind activates lower categorization levels only, i.e. the actual countries, the actual presidents, existing geographical areas etc. which belong to the input spaces and thus ensure their conceptual precedence over the generic space. Because of that, the generic space is also in a sense a broader mental space than either the input spaces or the blend. Its size is not due to a greater number of elements contained in it as opposed to other spaces, but is a result of its global nature. More specifically, the generic space comprises generic concepts and generic properties and it just has the function of licensing the correlation between the inputs. Thus, for example, the generic concept *country* in example (1) encompasses the generic property of being a *country* and is present as an element of the generic space in many other examples besides *France* and *the USA*.

As regards the input spaces, they usually accommodate the communicatively relevant categorization levels, basic levels and their subordinated levels of cate-

gorization, which guarantees their status of highlighted mental spaces. However, although the input spaces in general are highlighted mental spaces, not all of their elements are. This is not the case, as we recall, with the generic space which in its entirety belongs to the conceptual background. Conceptual integration is subject to selective projection, highlighting only those elements which are actually projected into the blend. The fact that only some of the input space elements participate in the blend has been noted by Fauconnier and Turner: "Not all elements and relations from the inputs are projected to the blend." (Fauconnier & Turner 2002: 47).

After the completion of the integration-projection process, elements which at first were only highlighted, assume the value of focal, most prominent elements, creating the smallest, yet conceptually the most salient focal space – the blend. The salient elements in example (1) are e.g. *the French geographical area* and *French voters*. They are projected into the blend, where they assume features of focal elements, while the *American geographical area* and *American voters*, given their failure to participate in forming the dynamic blended space, belong to background elements of the second input space. Given what has just been said and in line with the usual formal apparatus of cognitive linguistics, the diagrammatic representations of the different mental spaces should differ, making their relative cognitive values and conceptual hierarchies stand out with more prominence. The generic space and its elements, as cognitively almost completely defocused elements in on-line interpretation, can formally be represented by dashed lines; input spaces, as conceptually highlighted spaces, can be drawn in solid lines, while the focal nature of the blend can be represented by heavy lines. Representations of elements belonging to different mental spaces should also vary. Elements that are projected into the blend may be represented by heavy lines, others either by solid or dashed lines, depending on their cognitive-conceptual value within a single input space. Example (1) is one of many examples[5] which, according to Fauconnier & Turner (2002: 225) and Taylor (2002: 531), among other things, call for the introduction of context into the diagram, since the context, whatever its nature and however determined, steers utterance interpretation. Thus the interpretation of utterance (1) in the blend may be based on a lesser interest of the *French public* in political affairs and scandals, on greater leniency of the *French press*, or on less severe legal

[5] Among more familiar and oft quoted examples of counterfactuals which licence multiple contextually determined interpretations is Turner & Fauconnier's (2000: 133) famous *Titanic* example where the political survival of Bill Clinton following the affair with Monica Lewinsky is compared to the sinking of the Titanic (*If Clinton were the Titanic, the iceberg would sink*.) and Taylor's (2002: 530) examle transplanting this affair, as well as Nixon, into France (*In France, Bill Clinton would not have been harmed by his affair with Monica Lewinsky*.)

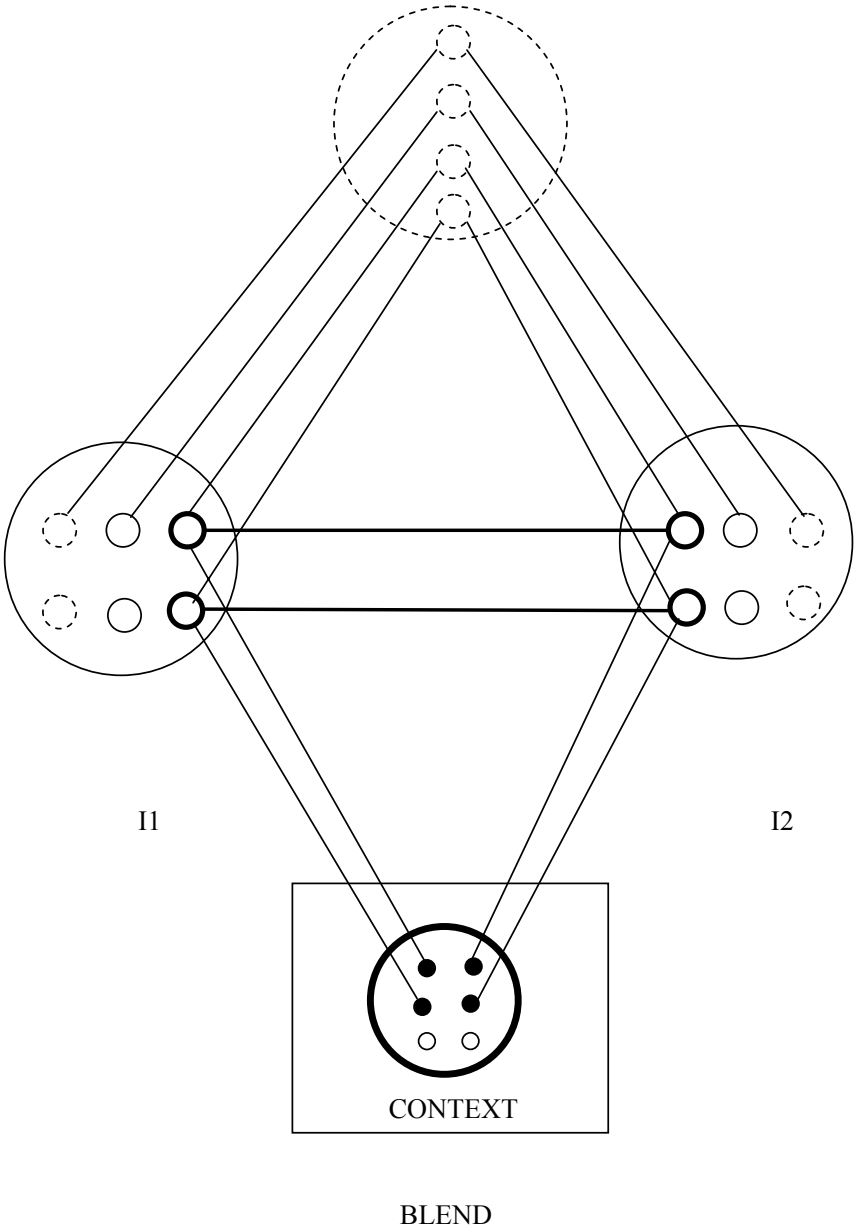

Fig. 2. Basic model of conceptual integration in on-line utterance interpretation

penalties that affect presidential candidates in such circumstances. Figure 2 represents a proposal of the basic model of conceptual integration in the light of the momentary nature of on-line utterance interpretation.

The following counterfactual and metaphorical example illustrates even more clearly the cognitive-conceptual value of elements of input spaces and the process of conceptual integration:

(2) England will find it hard to beat German arguments in favor of Croatia's accession to the European Union.

We can use this example to vividly and metaphorically show how, on the one hand, elements to be projected into the blend are profiled, and on the other, the remaining ones, i.e. those that stay in the inputs, are pushed into conceptual background. Following the interpretation of double metonymy, to which we shall return later, (PLACE FOR INSTITUTION > INSTITUTION FOR PEOPLE), the blend accommodates only a few members of special delegations of the ministries of foreign affairs of the two countries, who thus gain the status of focal elements. With the activation of the blend, these members enter into a dynamic discussion. The focal elements of the blend hence become conceptually clear or sharp (conceptually known), other members of the ministries, who do not participate in the discussion, remain somewhat in the shadow (are conceptually less known), while members of the two governments who belong to other ministries (ministry of education, health department etc.) are completely outshadowed (conceptually unknown) and stand in the background. Members of the two governments who are not projected into the blend remain in the input spaces. According to our diagram (Fig. 2.), members of the two ministries of foreign affairs not participating in the discussion, i.e. who are not projected into the blend, would be represented in solid lines, while members of other ministries would be represented by dashed lines due to their being even more conceptually defocussed.

This metaphoric relationship, namely, the interaction of light and dark in the source domain, which corresponds to an analogous conceptual reduction of elements from the input spaces and their projection into the blend in the target domain is shown in Figure 3.

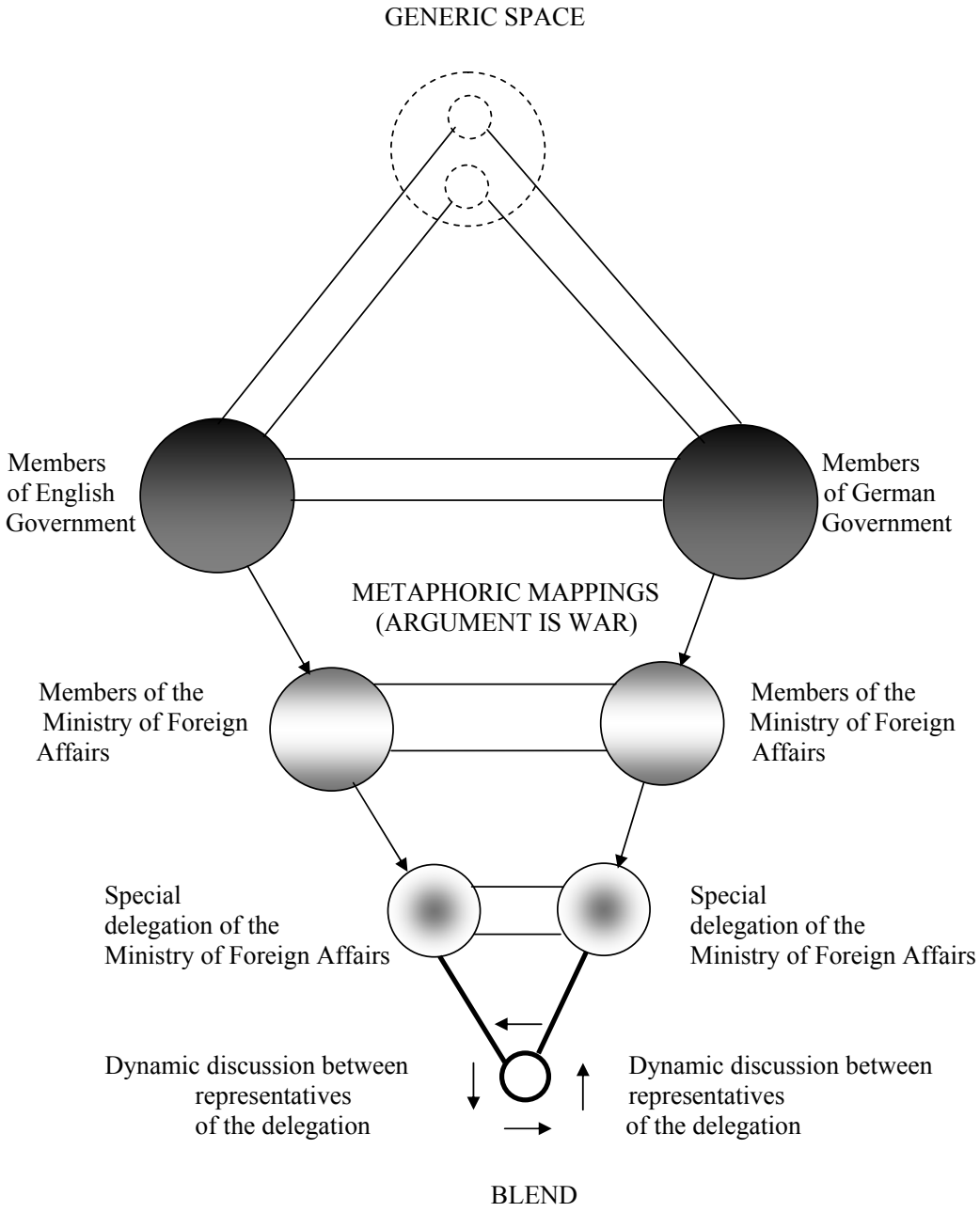

Fig. 3. Stages in the development of the blend (illustrated with the help of metaphor KNOWN IS LIGHT/UNKNOWN IS DARK)

The KNOWN IS LIGHT and UNKNOWN IS DARK[6] metaphors are actually submetaphors which jointly allow for the interpretation of a more general metaphor KNOWING IS SEEING. Only that which can be seen can be truly known, things can be seen only if they stand in the light, i.e. light makes us able to see. Given the interconnection and integration of these metaphors, we stop here to make an interesting digression. There is a phenomenon in our physical world where ease of interpretation depends on the relationship between light and dark. This phenomenon, we believe, strongly corroborates our approach to conceptual integration through the prism of the metaphorical relationship between light and dark. Namely, elements and stages of conceptual integration can be compared to a photograph, i.e. to the process of making a photograph. A part of the camera, the blend, is responsible for achieving the optimal relative amount of light and dark thus making the photograph clear and sharp. We could draw two parallels between the process of making a photograph and the process of conceptual integration. Since visualization is one of the most important elements of conceptualization, the first parallel that can be drawn is that between the blend as part of the camera which strikes the right balance between light and dark in a photograph on the one hand, and on the other, the cognitive mechanisms in the brain which regulate the relationship between the known and unknown, focused and defocused elements in creating the blend. The other parallel may be drawn between the results of these two processes: the photograph as a visual phenomenon, which exhibits an ideal balance between light and shadow on the one hand; and on the other, the blend as a conceptual phenomenon, i.e. the clear and focused conceptual photograph where the elements of light and dark metaphorically map onto the conceptually known and unknown elements recruited from input spaces into the blend.

2.2. *Metonymy and conceptual integration*

At this point we turn our attention to the second problem raised earlier in this paper, the problem of the relationship between some types of metonymy and mental spaces in the process of conceptual integration. One of the papers that must be mentioned in that regard is a paper by M. Turner and G. Fauconnier (2000) where the authors use several examples to explain the relationship between metonymic relations in the input spaces and these relations in the blend after the completion of conceptual integration. The key notion is the so called *metonymy projection constraint*. The basic idea of this constraint is that some indirect metonymic relations from the input spaces become direct metonymic re-

[6] KNOWN and UNKNOWN as target domains in these metaphors should not be literally understood, because they actually mean focused and defocused.

lations in the blend, that is, that metonymic links become tighter, and thus clearer. One of the especially interesting examples in that regard is the already classical, and across different arts quite frequent representation of death as The Grim Reaper – skeleton wearing a long black robe and a cowl pulled over his head. According to Turner and Fauconnier, this portrayal of death emerges in the blend as a result of fusion of elements from multiple mental spaces - (i) the space of particular human death; (ii) the space with an abstract model of causal relations; (iii) the space with a prototypical human killer and (iv) the space of harvest – in which there are certain metonymic relationships. So, for example, death in the input space of human dying is metonymically linked to the priest, who is associated with dying, funerals and burials. However, the link between death and the priest, more precisely his robe, is only indirect in the input space, while in the blend it is tightened such that the robe and the cowl, which is attire we associate with priests, monks etc. can become the attire of Death. The case is similar with the skeleton, which is only connected to death in the input space via a high-level metonymy as a RESULT of death for CAUSE – in the blend, however, this link again becomes direct with the skeleton functioning as the body of Death. All in all, this is a prime example of an excellent portrayal of metonymic relations within different types of mental spaces, however, one extremely important relation has been neglected. In our esteem, the metaphoric-metonymic relationship between the harvester input space in the harvesting scenario and Death as the reaper in the blend has not received the attention it deserves. Namely, the wheat from the input space is a metaphor for fertility, which in turn stands metonymically as CAUSE for life as its EFFECT[7]. It is this relationship that allows for a direct link in the blend between death/harvester as collector of harvest/life. We further hold that the prototypical human killer, which it seems to us, is a somewhat harsh word given the connotations that the canonical representation of death as reaper (harvester) evokes, from the third input space, should be replaced by a sort of a 'spontaneous' collector of life whereby no such strong emphasis would be placed on the intention as is the case in the killing scenario. This claim can be supported if we consider the analogy which can be established between the harvester who comes to collect wheat at the end of its natural maturation cycle, and Death which normally comes to take life at the end of the human life cycle. The above interpretation of the relationship between harvest and death, which are not counterparts in the input spaces, allows for the creation of a tighter link between them in the blend. Besides the metonymic link to life through the aspect of fertility, wheat is also, via fertility, connected to wealth

[7] We could pursue several metonymic-metaphoric routs here. One of them consists in setting up the high-level metonymic relation CAUSE FOR EFFECT between wheat and bread in the domain of bread manufacturing, and subsequently mapping bread metaphorically onto life, via the Biblical motif of the body of Jesus Christ.

and prosperity. This metaphoric-metonymic thread allows us to invite into the blend a further scenario, the knowledge of the plague epidemics which ravaged Europe in the Middle Ages, and which destroyed not only human lives but also the fruits of human labour. Needless to say, the artists of the time often portrayed the notorious Black Death as a skeleton in a long black robe and a cowl over his head, be it in literature or in fine arts. The personification of the plague is motivated by a metonymic expansion: PART FOR WHOLE > PLAGUE FOR DEATH. Similar to the relation between Death and the skeleton and Death and the priest in the input space of individual human dying, in the input space of abstract causal relations, which among other abstract causal relations also hosts Death, the plague is but one of the modes of dying (among other terminal diseases). It is only one element of the death domain, however, the link between them too becomes tight in the blend. Regarding the *Plague* example, we should mention a very interesting phenomenon which merits further attention and elaboration; namely, the phenomenon of switching from metonymic reduction in the input spaces to metonymic expansion in the blend. Death and the Plague stand in a WHOLE FOR PART relation in the input space of abstract causal relations, plague being just one of terminal illnesses. Through metonymic reduction, the semantic field of death is narrowed down as the plague is transferred into the blend. In the blend, however, the plague, as one of many terminal illnesses, is personified as a character that represents death as a general phenomenon. This we believe is a result of applying the cognitive operation of metonymic expansion in the blend – plague as a specific CAUSE stands for death as a general RESULT.

This provides additional arguments in support of Turner and Fauconnier's metonymy projection constraint. On the other hand, and even more importantly, Ruiz de Mendoza (2000), Ruiz de Mendoza & Peña Cervel (2002) and Ruiz de Mendoza & Diez Velasco (2003) discuss the place and manner of metonymy interpretation within metaphorical source and target domains and propose four basic models: metonymic expansion of the metaphoric source or its parts, metonymic reduction of the metaphoric source or its parts, metonymic expansion of the metaphoric target or its parts and finally metonymic reduction of the metaphoric target or its parts. Metonymic reduction and metonymic expansion of metaphoric domains are actually alternative terms for the two basic metonymic relations; namely, for the WHOLE FOR PART relation on the one hand, i.e. whereby the target domain is a portion or a subdomain of the source domain - *target in source metonymy*, and on the other, for the PART FOR WHOLE relation, whereby the source domain is a portion or a subdomain of the target - *source in target metonymy* (Figs. 4-7).

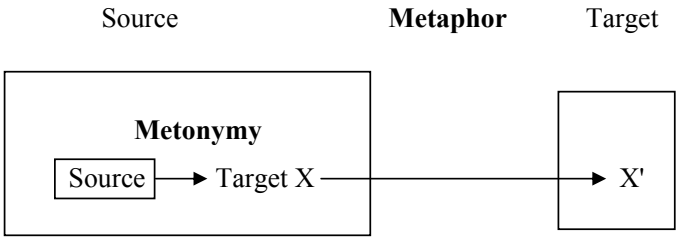

Fig. 4. Metonymic expansion of the metaphoric source or its parts

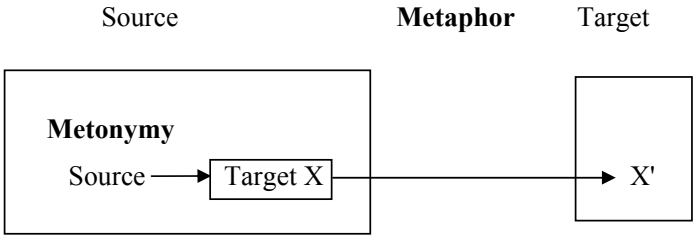

Fig. 5. Metonymic reduction of the metaphoric source or its parts

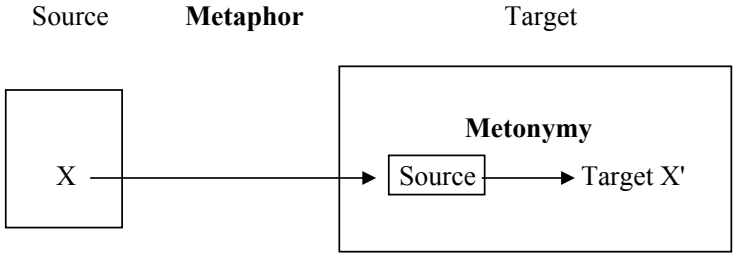

Fig. 6. Metonymic expansion of the metaphoric target or its parts

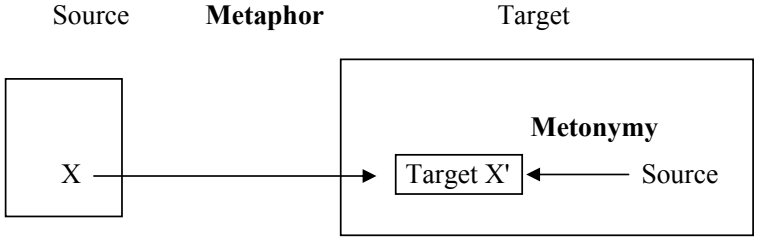

Fig. 7. Metonymic reduction of the metaphoric target or its parts

Skipping the many illustrations provided by Ruiz de Mendoza and associates, let us only mention two examples from Ruiz de Mendoza and Diez Velasco (2003) by way of illustration. According to their model, the expression *to win one's heart* is an example of metonymic reduction of a portion of metaphoric target domain (Fig. 7.), namely *heart* which stands for *love* as one of its contextually determined subdomains[8] or active zones. The expression *to bite the hand that feeds you*, on the other hand, would be an example of metonymic expansion of a part of metaphoric source domain (Fig. 4.), whereby *hand* as part of human body stands for the *human being* as a whole, i.e. where *hand*, as the metonymic source domain is just one of the subdomains of *human being* as the target domain. As is evident from Figures 4-7 above, the interpretation of any metonymic relation, be it metonymic reduction or metonymic expansion, is performed within the metaphoric source or target domain. We will stop here and try to show on several counterfactual and metaphorical examples that a more thorough cognitive analysis can lead to somewhat different conclusions, i.e. that metonymy need not necessarily be interpreted within metaphoric source and target domains. We will show that there are counterfactual[9] and metaphorical utterances where metonymy is interpreted before the input spaces, i.e. before the source and the target domain respectively. Such mental spaces, which function as sites of metonymy interpretation will be called *pre-input spaces* in case of counterfactuals and *pre-target space* in cases of metonymy-metaphor interaction. We will also attempt to identify forces that determine the site of metonymy interpretation, i.e. on the one hand, the preconditions that need to be met in order for metonymy to be interpreted in pre-input spaces, and on the other, those that have to be met for metonymy to be interpreted within input spaces.

This brings us back to our example in (2):

(2) England will find it hard to beat German arguments in favor of Croatia's accession to the European Union.

[8] The concept of *reciprocation of love*, i.e. of *mutual infatuation* is really just **one** of the possible contextually determined subdomains activated by the notion of *heart*. This fact is supported by Croatian examples like '*imati veliko srce*' (literally: to have a big heart), where context may support the activation of the subdomain of *courageousness* or *generosity* and e.g. the example '*biti nečije srce*' (literally: to be somebody's heart) whereby a subdomain of another kind of love is activated, e.g. *motherly* love.

[9] It should be pointed out that counterfactuality do not exclude metaphor. Counterfactuals may also make use of metaphor, as in the already mentioned famous example *If Clinton were the Titanic, the iceberg would sink*.

This sentence is an example of a general metaphor ARGUMENT IS WAR.[10] Since in this example *England* and *Germany* trigger a double metonymy PLACE FOR INSTITUTION > INSTITUTION FOR PEOPLE, and both of the metonymies belong to one of three[11] general metonymic models, namely, the WHOLE FOR PART model, Ruiz de Mendoza et al. (2000, 2002, 2003) would propose the activation of the mechanism of metonymic reduction of a portion of metaphoric target, whereby the tightening of the part would take place within the metaphoric target domain. Figure 7 illustrates the general model of metonymic reduction of a portion of metaphoric target domain; Figure 8. illustrates the application of this model to example (2):

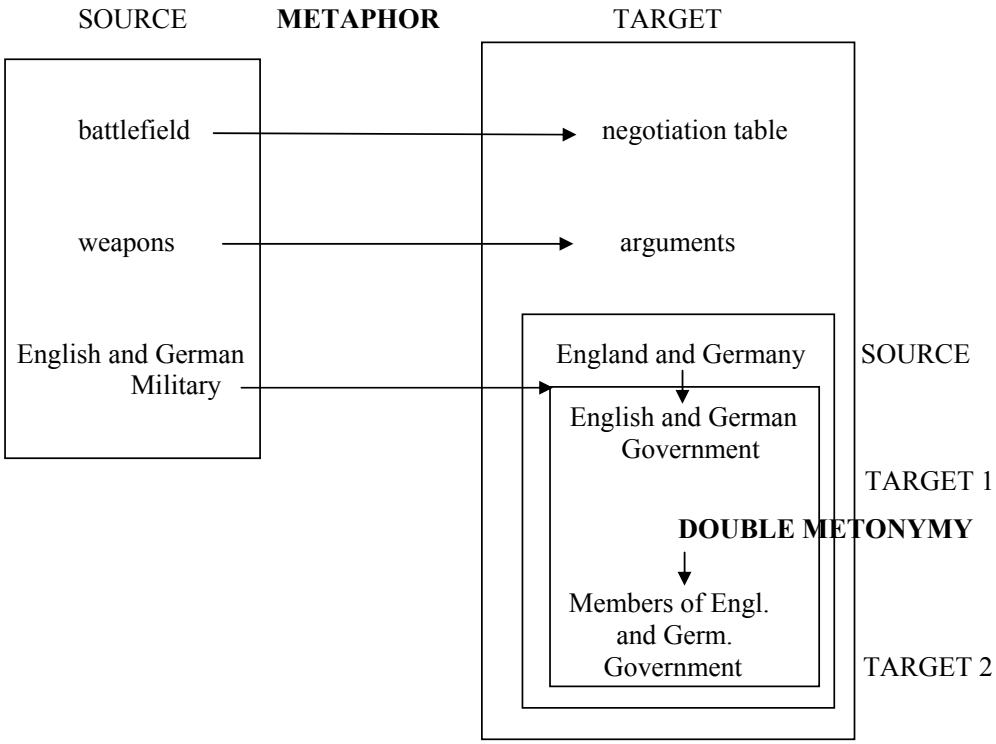

Fig. 8. Metonymic reduction of a portion of metaphoric target domain

[10] G. Lakoff and M. Johnson (1980) discuss this structural metaphor in more detail.

[11] Besides the basic metonymic models WHOLE FOR PART and PART FOR WHOLE, there is a third one, though most dubious one—PART FOR PART—to which we shall return later.

Let us recall the stages in the formation of the blend (Fig. 3.) and think about which elements are highlighted in our consciousness. In other words, which subdomains of *England* and *Germany* are in the cognitive frontline in on-line interpretation of utterance (2)? Do the English and German national soccer or basketball teams come to mind, since these subdomains can rightfully claim status of active zones in examples like

(3) England beat Germany in the last World Soccer Championship.

The answer, of course, is no. At the moment of interpreting sentence (2) what is activated in our consciousness are only government members of the two countries. Thus they have the status of highlighted elements which are tightened as the process of conceptual integration unfolds.[12] As a result, some remain in the input space, while others become focal elements participating in the formation of the blend. In other words, this means that this would be the only subdomain that is thought of at that moment, the only subdomain that is conceptually present in the target domain, while other subdomains of *England* and *Germany* (i.e. their national sports teams, portions of their geography, their economic resources, etc.) are pushed back in the background. The activation of those domains at that moment, just like the activation of elements of the generic space, takes extra cognitive effort. This justifies our assumption that the site of interpretation of that metonymy is not within the metaphoric target, but that the metonymy is already interpreted in some pre-space before conceptual integration continues to unfold. Since this metonymy refers to the metaphoric target domain, we may call this pre-space a pre-target mental space (Fig. 9.). This pre-space contains *England* and *Germany* with all their subdomains, and at a given moment in communication, the subdomain of government members of the two governments is extracted, and is transferred into the target domain. Other subdomains remain in the pre-target space, their activation remaining latent until some other communicative contexts prompt it[13] as in (3). Therefore, but also due to the fact that interpreting metonymy is an automatic unconscious process, the pre-target space is represented in dashed lines, which signals its status as a defocused mental space.[14]

[12] A reduction of this type, illustrated in Figure 3, should be differentiated from the metonymic reduction as advocated by Ruiz de Mendoza et al. (2000, 2002, 2003). Here the elements are tightened that were left behind after a preceding metonymic reduction of a portion of the metaphoric target domain.

[13] The arguments mentioned are reason for the introduction of the context into the basic model of conceptual integration in Fig. 2.

[14] While the pre-spaces are defocused spaces as it is the generic space, they are not schematic. That is why we divided defocused spaces to schematic and non-schematic earlier in the paper.

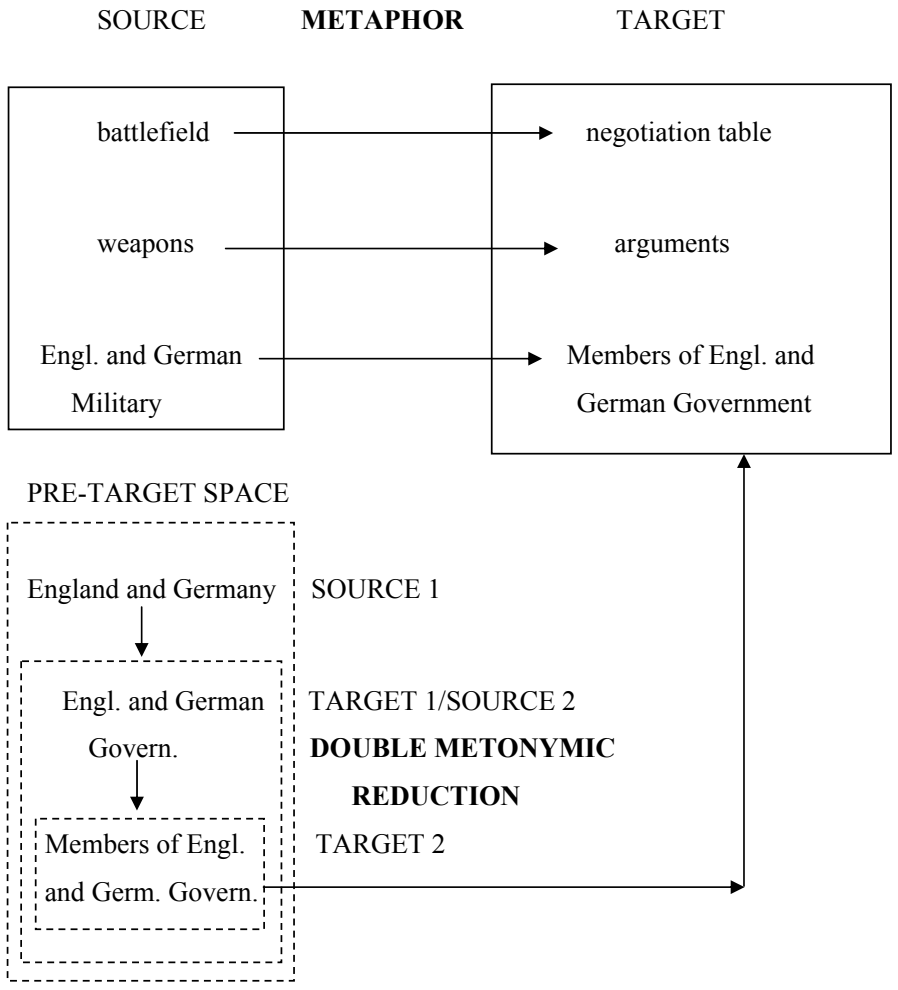

Fig. 9. Pre-target mental space

Let us consider another example of metonymic reduction of the metaphoric target domain which squares well with the proposal of introduction of a pre-target space:

(4) Most people find **James Joyce** hard to follow.

This example could be subsumed under the metaphor UNDERSTANDING (A PERSONS IDEAS) IS FOLLOWING (THE PERSON ALONG A CERTAIN ROUTE), where *James Joyce* as a WHOLE stands for his *literary works* as

PART in the metonymic model AUTHOR FOR HIS WORK. As in example (2), here too our consciousness only has Joyce's literary works available at the moment of interpretation, in other words, the context prompts the extraction of the subdomain of Joyce's literary works from the pre-tagret space, which also contains all other potential subdomains. Then in the process of conceptual integration, only Joyce's dense readings (e.g. *Ullysses*) are projected from the target space into the blend thereby gaining features of focal elements. His lighter readings, on the other hand, remain in the target space, retaining the status of highlighted elements. The case is similar with metonymic counterfactuals as well (5-6):

(5) If women hadn't gotten the **pill** in the 60s, they wouldn't be as "free" as they are today.

(6) If **Hitler** had attacked Russia somewhat earlier, he would have gained much more Russian ground before the winter.

The counterfactual in (5) belongs to the metonymic reduction model, i.e. the WHOLE FOR PART model. There is no reason to believe that anything other than the subdomain of *birth control pills* is called to mind at the moment of interpreting the sentence. This subdomain is extracted from the pre-input space and replanted into the input space, while other non-activated subdomains, e.g. *painkillers*, *antidepressants*, *antibiotics* etc. remain latent in the conceptual background, i.e. in the defocused pre-input space. Depending on the person interpreting the utterance, their beliefs and experience, different sorts of birth control pills, which are located in the input space at the beginning of conceptual integration, are recruited into the blend as the process of conceptual integration unfolds. Some types remain latent in the consciousness, i.e. remain in the input space as highlighted elements, while others, i.e. those salient in the individual's experience, are projected into the blend in the capacity of focal elements in the hypothetical state of affairs expressed by the sentence.

The *Hitler* metonymy in counterfactual (6) belongs to the same conceptual integration type, as far as the process of formation of the blend goes; however, it can be interpreted in several ways. The first reading is straightforward, i.e. exhibits the metonymic type COMMANDER FOR THE COMMANDED, while the other one is of somewhat more complex nature, instantiating the expansion-reduction model. The metonymic expansion and reduction are behind the reading in which *Hitler* as PART, albeit the most important part, yet still a part, stands for the WHOLE *Germany*, which subsequently is reduced down to one of its subdomains, the *German military*. The sentence *If Hitler had attacked Russia somewhat earlier…* can very easily, and very likely, be interpreted as follows *If Germany had attacked Russia somewhat earlier…*, in which case a triple meton-

ymy is at work: INDIVIDUAL FOR STATE (FOR PLACE) > STATE (PLACE) FOR INSTITUTION (i.e. the military as institution) > INSTITUTION FOR PEOPLE. The first metonymy in the chain is of the expansion type, the remaining two being reduction metonymies. If we interpret example (6) as has just been suggested, we could say that the general metonymic model PART FOR PART[15] is at work here, in which *Hitler* as PART of the domain of *Germany*, only indirectly though, stands for its other PART, the *German military*. In the context of establishing metonymic PART FOR PART model, but not in the context of pre-spaces, similar is the case with the example

(7) If you have a headache, take an **Aspirin**.

where the interpretation of metonymy is not performed directly between the *Aspirin* as PART and *other painkillers* as other PARTS of a whole, although such views are not to be discarded completely. In this example too we have an indirect link between the parts, via painkillers as a whole. This example first prompts the activation of *painkillers* as a whole through metonymic expansion, only later to see that whole reduced down to *specific painkillers* (*Temgesic, Darvon, Darvocet* etc.), depending on which is one's medication of choice. This makes Ruiz de Mendoza's (2000) views on non-existence of a general metonymic model PART FOR PART sound somewhat too harsh. In our esteem, this model does exist, however, it is most frequently activated indirectly, i.e. after the metonymic expansion model PART FOR WHOLE has applied.

The structure of such metonymies is illustrated in Fig. 10.

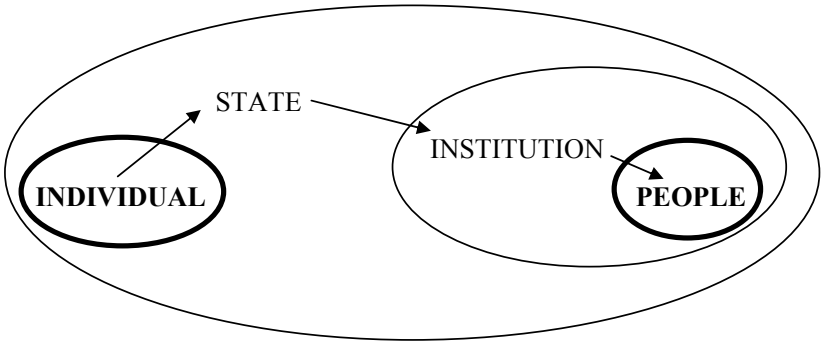

Fig. 10. Indirect activation of PART-FOR-PART metonymy

[15] The size of circles in Fig. 10, which stand for the individual (Hitler) as the source domain and people as the target domain, shows that the PART FOR PART interpretation really makes sense.

After metonymy has been interpreted in the pre-input space, the process of conceptual integration unfolds according to the same model as illustrated for examples (2-5). Conceptual integration starts in the input space with the whole German military, whose parts are subsequently conceptually reduced only to preserve its one part in the blend (whether it is going to be infantry, heavy artillery, air forces etc., will again depend on the individual's conceptual system). This remaining part participates in the creation of a hypothetical situation in which some part of the German military penetrates deeper into the Russian territory before winter. After the activation of the blend, i.e. after it has been set in motion, the focal elements of the situations portrayed in (2-6) are subject to various elaborations, depending on an individual's imagery and imaginative capacity. The pre-input spaces within the basic model of conceptual integration in on-line interpretation are shown in Fig. 11.

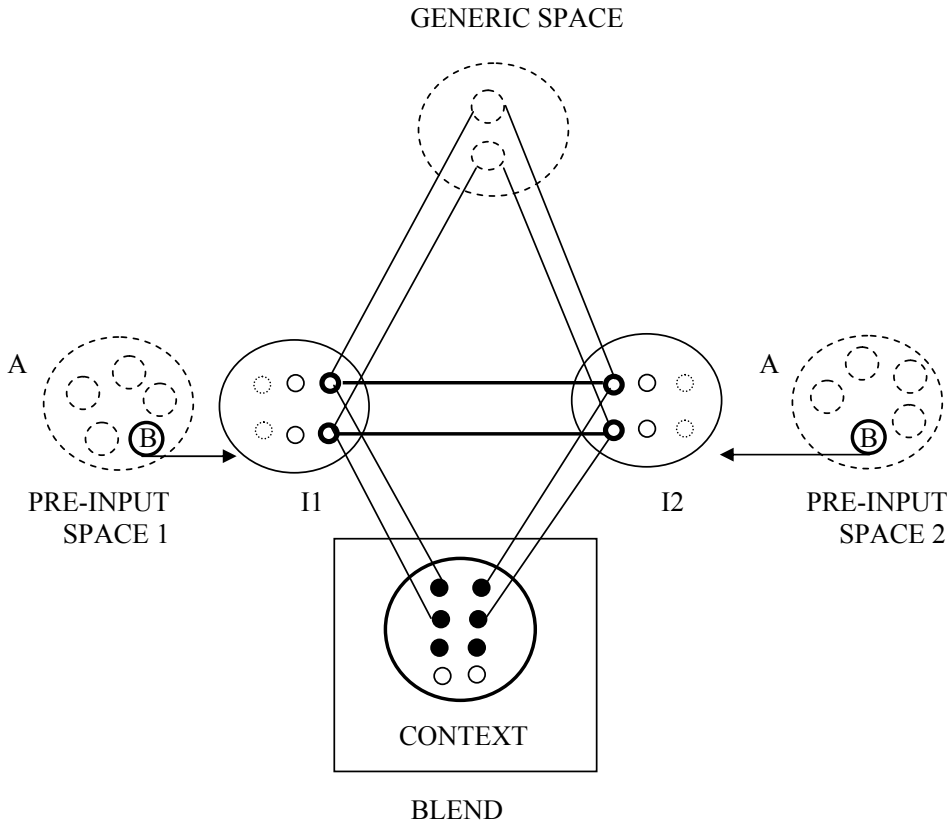

Fig. 11. Pre-input spaces as the site of interpretation of the two basic types of metonymy within the basic model of conceptual integration

The story is different with examples (8-10):

(8) **She** went red with rage.
(9) If you had washed **the car** yesterday, we would be able to start earlier today.
(10) If the burglar had not been forced to break **the window**, the police would have a harder job to do.

In such examples it is not only the activated subdomains that can be found in the input spaces at the moment of interpretation. So the *face*, *exterior of the car* and *window pane* as active zones and target domains of metonymic expressions *she*, *car* and *window*, are only conceptualized within the wholes that metonymically determine them. In other words, we cannot speak of the same type of conceptual extraction of the target subdomain in examples (8-10) and in the (2-6) examples. In examples of this type we cannot speak of metonymy being interpreted within a pre-input space, but the subdomains that such metonymies highlight are only accentuated, i.e. they come into the forefront of the input spaces, exclusively as parts of larger compact wholes. What is it that dictates when metonymy is to be interpreted in pre-input spaces and when in input spaces? What kind of cognitive phenomenon in some cases requires the formation of pre-input spaces while in others not? Answers to these questions can be found in the nature of the relationship between parts and wholes in the extralinguistic world, which map onto the realm of human conceptualization. In cases of domains like *England* and *Germany*, *pills*, *J. Joyce*, *Hitler*, etc., there is a huge number of distinct subdomains which may be conceptualized and activated independent from one another. Those subdomains make separate units, which in turn often consist of a number of subdomains themselves. Thus one of the many subdomains of *England* is its *government*, which has several subdomains of its own (a large number of different ministries), which, as superordinate domains, branch off into still further subdomains (different sections within a single ministry) etc. *Pills*, too, exhibit multiple subdomains like *birth control pills*, *painkillers*, *antibiotics* etc., which branch into its own subdomains, e.g. different kinds of birth control pills, different kinds of painkillers etc. Such examples form a hierarchical network of domains and subdomains which all have potential for independent conceptualization. On the other hand, metonymies of the *window*, *car* and *human body* type, are not interpreted in pre-input spaces as their subdomains form compact wholes whereby it is only then possible to conceptualize individual parts as active zones in a given context if they are part of some other part, some other subdomain, most frequently of a whole. That is why *face*, *the exterior of the car* and *window pane* in examples (8-10) as active zones or salient subdomains can only be conceptualized within a whole, i.e. their projection into the blend in the mentioned hypothetical situations is only possible as parts of *the entire human body*, *the en-*

tire car and *window frame* as indivisible wholes respectively. (2-6) on the other hand contain salient subdomains that are independently projected into the blend, without co-activation of other subdomains. In other words, such examples create a network of profile - base - domain relations, or, according to Langacker (1987), a network of abstract domains, in which some subdomains function as bases, i.e. as the immediate conceptual context inevitable in conceptualizing other subdomains. Fig.12. illustrates the metonymic relation described in (2-6) with conceptually delineated and independent subdomains, while Fig. 13. is a diagrammatic representation of (8-10) with their individually inaccessible and dependent parts which only make sense as parts of larger wholes or the whole. As in cases like (8-10), and unlike in cases like (2-6), there is no possibility of conceptual extraction of individual subdomains, there are thus no theoretical grounds for the establishment of pre-input spaces. Such compact units are directly projected into the blend, i.e. from the inputs, whereby metonymy is interpreted along the route leading from the input space to the blend. It is very important to point out that pre-input spaces shold be understood only as a theoretical model whose only purpose is to explain differences in number and type of subdomains that could be activated by some metonymic expression in particular contexts.

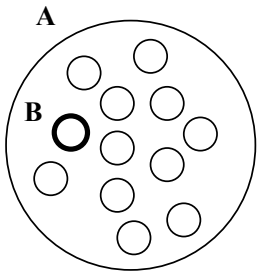

Fig. 12. Metonymic relation with conceptually delineated and independent subdomains

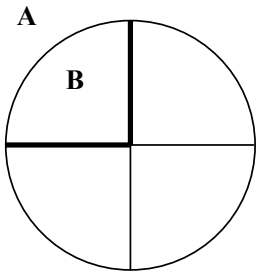

Fig. 13. Diagrammatic representation with individually inaccessible and dependent parts

In view of what has just been said, we propose the following hypothesis:

The Pre-input Spaces Hypothesis:

The likelihood of creation of pre-input spaces as sites of metonymy interpretation is proportional to the number of different subdomains contained by the whole, and that in proportion to the degree of their discreteness and the degree of their separability from the whole.

3. Conclusion

The Conceptual Integration Theory has shown to be one of the most intriguing and most interesting theory in cognitive approaches to language. Its methodological apparatus opens avenues of research into the ways humans think and conceptualize, and so facilitates the analysis of mountains of linguistic phenomena. Yet, what seems to be missing in the theory, and which we have tried to point out here, is a more detailed articulation of the role and nature of mental spaces in on-line communication. This paper was an attempt to bridge the gap between theoretical assumptions and their implementation in actual communicative contexts. In an attempt to present a more thorough and complete cognitive analysis of mental spaces and their elements in a communication process, i.e. in on-line interpretation, we divided them into (i) defocused (generic space and pre-input spaces), (ii) highlighted (input spaces) and (iii) focal space (blend). Such conceptual nuancing of the different mental spaces and their elements brings the multi-space theoretical framework closer to the human being in his actual linguistic activities, which, after all, is the purpose and ultimate objective of any cognitive analysis.

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O KOGNITIVNOM STATUSU MENTALNIH PROSTORA I O NEKIM TIPOVIMA METONIMIJE U OKVIRU TEORIJE KONCEPTUALNE INTEGRACIJE

U svjetlu trenutnosti procesa konceptualne integracije kritički se pristupa kognitivno-konceptualnom status četiriju vrsta mentalnih prostora i njihovih elemenata: ulaznih prostora, generičkoga prostora te blenda, a u skladu s razlikama među njima dijele se na defokusirane, istaknute i fokalne mentalne prostore. Također se raspravlja i o mjestu i načinu interpretacije nekih tipova metonimije u kontekstu te teorije i predlaže se uvođenje petoga mentalnog prostora - predulaznoga prostora ukoliko je riječ o protučinjeničnom iskazu, odnosno predizvornoga i predciljnoga prostora ukoliko se radi o djelovanju metonimije unutar metaforičkoga iskaza, kao mjesta njihove interpretacije.

Ključne riječi: temeljni model konceptualne integracije; ulazni prostori; generički prostor; blend; elementi mentalnih prostora; defokusirani, istaknuti i fokalni mentalni prostori; predulazni prostori; metafora; metonimija.