Definition 3 ***Normalized*** *connector space is such a connector space* $(U; r)$ *that*

$$\forall X, Y \in \mathscr{P}U : (X = \emptyset \vee Y = \emptyset \Rightarrow \neg(X \; r \; Y)) \quad \text{and} \quad \forall X, Y \in \mathscr{P}U : (X \cap Y \neq \emptyset \Rightarrow X \; r \; Y).$$

Definition 4 ***Normalization*** *of a connector space* $(U; r)$ *is the connector* $N(U; r) = (U; r')$ *defined by the formula (for every* $X, Y \in \mathscr{P}U$*)*

$$X \; r' \; Y \Leftrightarrow \begin{cases} 0 & \text{if } X = \emptyset \vee Y = \emptyset, \\ 1 & \text{if } X \cap Y \neq \emptyset, \\ X \; r \; Y & \text{otherwise}. \end{cases}$$

Obvious 1 *Normalization of a connector space is a normalized connector space.*

Obvious 2 *A set is connected regarding a connector space iff it is connected regarding its normalization.*

Obvious 3 *For a normalized connector* r *a set* A *is connected iff*

$$\forall X, Y \in \mathscr{P}A \setminus \{\emptyset\} : (X \cup Y = A \Rightarrow X \; r \; Y).$$

Definition 5

- ***Restriction*** $r|_A$ *of a connector* r *to a set* A *is the connector* $r \cap (\mathscr{P}A \times \mathscr{P}A)$.
- ***Restriction*** $(U; r)|_A$ *of a connector space* $(U; r)$ *to a set* $A \in \mathscr{P}U$ *is the connector space* $(A; r \cap (\mathscr{P}A \times \mathscr{P}A))$.

Theorem 1 $\mathrm{CC}((U; r)|_K) = \mathrm{CC}(U; r) \cap \mathscr{P}K$ *for every set* $K \in \mathscr{P}U$*.*

Proof $A \in \mathrm{CC}((U; r)|_K) \Leftrightarrow A \subseteq K \wedge \forall X, Y \in \mathscr{P}A \setminus \{\emptyset\} : (X \cup Y = A \wedge X \cap Y = \emptyset \Rightarrow X \; (r \cap (\mathscr{P}K \times \mathscr{P}K)) \; Y) \Leftrightarrow A \subseteq K \wedge \forall X, Y \in \mathscr{P}A \setminus \{\emptyset\} : (X \cup Y = A \wedge X \cap Y = \emptyset \Rightarrow X \; r \; Y) \Leftrightarrow A \subseteq K \wedge A \in \mathrm{CC}(U; r) \Leftrightarrow A \in \mathrm{CC}(U; r) \cap \mathscr{P}K$ for every set A. □

Corollary 1 $\mathrm{CC}((U; r)|_K) \subseteq \mathrm{CC}(U; r)$.

I will define an order on every set of connectors with the same base by the formula

$$(U; r_0) \subseteq (U; r_1) \Leftrightarrow r_0 \subseteq r_1.$$