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D E C L A R A T I O N

of the Republican and Conservative Parties United under the Georgian Parliamentary Faction "Democratic Front"

on the Principles of Georgia's Integration in NATO and Normalization of Russo-Georgian Relations

1. Georgia has stepped into the 21st century with two interrelated vital statehood problems: (1) de-facto loss of sovereignty on the part of its own territory; and (2) powerful neighboring country continues interfering in its internal affairs and pressuring through the use of methods inherited from the imperial past. Accordingly, the process of restoring Georgia's statehood has not completed yet, thus hampering the valuable political formation of a public life.

2. Resolution of these issues cannot be viewed as Georgia's internal problem only. It is highly unexpected that in the near future the Russian Federation shifts towards modern democratic standards of relations with the neighbors, thus placing the bilateral relations in a mutually beneficial channel. Being in the captivity of hegemonic ambitions, Russian Federation is unable to formulate and protect its own interests in the South Caucasus without causing harm to the statehood of Georgia and its national security.

3. Hence, Georgia's affiliation in such an international system, the joint forces of which the Russian Federation shall take into consideration, remains as a real means for normalizing relations between Georgia and the Russian Federation. Being a part of this system is crucial for Georgia not for gaining advantageous power with respect to Russia, but for neutralizing the actions directed against Georgian statehood. Consequently, Georgia's affiliation in NATO is a precondition for forming the equal and neighborly interstate relations with the Russian Federation.

4. Affiliation in NATO is not a matter of days or months. Even in the event of the most advantageous development of the scenario, reaching this goal shall require several years. In the meantime, Georgia should work under the intensive dialogue regime not only with NATO, but the Russian Federation, other neighbors and partners, and de-facto authorities and general public of separatist regions in order to make its strategic choice clear to the maximum and acceptable to the possible extents. Georgia should convince all that its affiliation in NATO is not directed against anyone, does not create danger for anyone, but rather aims to provide security to the country and its entire population. At the same time, this shall contribute to achieving stability and security in the geopolitically important region of the South Caucasus. By affiliating in NATO, Georgia should become a more trustworthy, predictable, and perspective partner for its direct neighbors in the South Caucasus region.

5. On the way to NATO Georgia should also develop maximum cooperation and integration with the Black Sea basin countries in the GUAM and other regional organizational formats. Steady approach to the EU membership criteria and the establishment and perception of European liberal and democratic standards in the political, economic, and social spheres are the necessary attributes for full-scale and equal membership of the Euro-Atlantic system of security.

6. A primary goal of Georgia's affiliation in NATO is to ensure country's security and unity and to protect its territorial integrity within the internationally recognized borders. Therefore, the guarantee of country's territorial integrity is a major precondition for becoming a member of NATO. This should be absolutely clear as for NATO and its member States, as well as for the neighboring countries. Accordingly, it is totally unacceptable to speculate about Georgia's affiliation in NATO so that only a part of its territory and population is protected and the problems related to Abkhazia and the former South Ossetian Autonomous District, as well as the IDP population remain unsolved. At the same time, citizens living in Abkhazia and the former South Ossetian Autonomous District should receive clear guarantees that Georgia does not intend to deal with them by means of forceful methods and abusing the NATO factor.

7. By means of affiliating in NATO, Georgia should restore the de-facto sovereignty lost on the part of its territory and not entrust the part of sovereignty seized by the Russian Federation to other entity/player. Georgia should be ready for full contribution to the realization of NATO member countries' common interests without violating its own strategic interests. Becoming a member of NATO should not be apprehended as alms given by the NATO member States to Georgia. Placing Georgia in the NATO sphere is a mutually beneficial phenomenon and it should be achieved through mutually acceptable ways and means.

8. Georgia's aspiration to NATO is accompanied by Russia's attempts to impede this process. Nevertheless, it is equally unacceptable to make recessions that further us from the goal and artificially aggravate relations with the Russian Federation, including acting and making statements that demean the dignity of its leaders or fellow citizens.

9. Integration in NATO makes Georgia a stronger state; and a stronger state should be more responsible, dignified, solid, and trustworthy. Parallel to leaving CIS and integrating in NATO, Georgia should offer the Russian Federation to accept mutually beneficial initiatives and show to the Russian Federation that it does not intend to participate in Russia's exclusion from the region, but intends to achieve its own security and non-intervention of borders, which would automatically ensure safety for Russia's southern borders as well.

10. Georgia should be rather solid in relations with the Western partners also. Their interest in Georgia's integration into the Euro-Atlantic area is not altruistic or fed only on democratic ideals; they also pursue their interests, in achieving which Georgia also plays a certain role. If the country is unable to act as a trustworthy and stable partner that fulfills all obligations undertaken, then the Western states shall seek alternative ways to realize their own interests. Infantilism, non-qualification, and inconsistency of the country's President and his team could create such obstacles on the way to country's integration into NATO. NATO membership is only one of the factors promoting economic upheaval, human rights, and the development of democracy in the country. Further, the development of democratic institutes and free entrepreneurship should precede integration in NATO. Unfortunately Saakashvili's government is still unable to realize this fact. It is obvious that if Georgia loses the unique chance and once again stays alone with Russia and other influential states of the region at this historical stage, then it will be doomed for eternal battle for survival and not the respectful labor for prosperity.

11. Finally, it should be stressed that Georgia's integration in NATO and the normalization of relations with the Russian Federation is a long-term strategic geopolitical task and in this context it is absolutely crucial to ensure the continuity of a relevant political course. Based on the mentioned, all political parties agreeing with this postulate (regardless whether they represent government or the opposition) should ensure the solution of this task through the joint efforts.

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Universal constructions, limits, and colimits[edit]

Main articles: Universal property and Limit (category theory)

Using the language of category theory, many areas of mathematical study can be categorized. Categories include sets, groups and topologies.

Each category is distinguished by properties that all its objects have in common, such as the empty set or the product of two topologies, yet in the definition of a category, objects are considered atomic, i.e., we *do not know* whether an object *A* is a set, a topology, or any other abstract concept. Hence, the challenge is to define special objects without referring to the internal structure of those objects. To define the empty set without referring to elements, or the product topology without referring to open sets, one can characterize these objects in terms of their relations to other objects, as given by the morphisms of the respective categories. Thus, the task is to find *universal properties* that uniquely determine the objects of interest.

Numerous important constructions can be described in a purely categorical way if the *category limit* can be developed and dualized to yield the notion of a *colimit*.

Equivalent categories[edit]

Main articles: Equivalence of categories and Isomorphism of categories

It is a natural question to ask: under which conditions can two categories be considered *essentially the same*, in the sense that theorems about one category can readily be transformed into theorems about the other category? The major tool one employs to describe such a situation is called *equivalence of categories*, which is given by appropriate functors between two categories. Categorical equivalence has found numerous applications in mathematics.

Further concepts and results[edit]

The definitions of categories and functors provide only the very basics of categorical algebra; additional important topics are listed below. Although there are strong interrelations between all of these topics, the given order can be considered as a guideline for further reading.

- The functor category D^C has as objects the functors from *C* to *D* and as morphisms the natural transformations of such functors. The Yoneda lemma is one of the most famous basic results of category theory; it describes representable functors in functor categories.
- Duality: Every statement, theorem, or definition in category theory has a *dual* which is essentially obtained by "reversing all the arrows". If one statement is true in a category *C* then its dual is true in the dual category C^{op}. This duality, which is transparent at the level of category theory, is often obscured in applications and can lead to surprising relationships.
- Adjoint functors: A functor can be left (or right) adjoint to another functor that maps in the opposite direction. Such a pair of adjoint functors typically arises from a construction defined by a universal property; this can be seen as a more abstract and powerful view on universal properties.

Higher-dimensional categories[edit]

Main article: Higher category theory

Many of the above concepts, especially equivalence of categories, adjoint functor pairs, and functor categories, can be situated into the context of *higher-dimensional categories*. Briefly, if we consider a morphism between two objects as a "process taking us from one object to another", then higher-dimensional categories allow us to profitably generalize this by considering "higher-dimensional processes".

For example, a (strict) 2-category is a category together with "morphisms between morphisms", i.e., processes which allow us to transform one morphism into another. We can then "compose" these "bimorphisms" both horizontally and vertically, and we require a 2-dimensional "exchange law" to hold, relating the two composition laws. In this context, the standard example is **Cat**, the 2-category of all (small) categories, and in this example, bimorphisms of morphisms are

simply natural transformations of morphisms in the usual sense. Another basic example is to consider a 2-category with a single object; these are essentially monoidal categories. Bicategories are a weaker notion of 2-dimensional categories in which the composition of morphisms is not strictly associative, but only associative "up to" an isomorphism.

This process can be extended for all natural numbers *n*, and these are called *n*-categories. There is even a notion of *ω-category* corresponding to the ordinal number ω.

Higher-dimensional categories are part of the broader mathematical field of higher-dimensional algebra, a concept introduced by Ronald Brown. For a conversational introduction to these ideas, see John Baez, 'A Tale of *n*-categories' (1996).

Historical notes[edit]

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Main article: Timeline of category theory and related mathematics

> It should be observed first that the whole concept of a category is essentially an auxiliary one; our basic concepts are essentially those of a functor and of a natural transformation [...]
>
> — *Samuel Eilenberg and Saunders Mac Lane, General theory of natural equivalences*[6]

In 1942–45, Samuel Eilenberg and Saunders Mac Lane introduced categories, functors, and natural transformations as part of their work in topology, especially algebraic topology. Their work was an important part of the transition from intuitive and geometric homology to axiomatic homology theory. Eilenberg and Mac Lane later wrote that their goal was to understand natural transformations. That required defining functors, which required categories.

Stanislaw Ulam, and some writing on his behalf, have claimed that related ideas were current in the late 1930s in Poland. Eilenberg was Polish, and studied mathematics in Poland in the 1930s. Category theory is also, in some sense, a continuation of the work of Emmy Noether (one of Mac Lane's teachers) in formalizing abstract processes; Noether realized that understanding a type of mathematical structure requires understanding the processes that preserve that structure. To achieve this understanding, Eilenberg and Mac Lane proposed an axiomatic formalization of the relation between structures and the processes that preserve them.

The subsequent development of category theory was powered first by the computational needs of homological algebra, and later by the axiomatic needs of algebraic geometry. General category theory, an extension of universal algebra having many new features allowing for semantic flexibility and higher-order logic, came later; it is now applied throughout mathematics.

Certain categories called topoi (singular *topos*) can even serve as an alternative to axiomatic set theory as a foundation of mathematics. A topos can also be considered as a specific type of category with two additional topos axioms. These foundational applications of category theory have been worked out in fair detail as a basis for, and justification of, constructive mathematics. Topos theory is a form of abstract sheaf theory, with geometric origins, and leads to ideas such as pointless topology.

Categorical logic is now a well-defined field based on type theory for intuitionistic logics, with applications in functional programming and domain theory, where a cartesian closed category is taken as a non-syntactic description of a lambda calculus. At the very least, category theoretic language clarifies what exactly these related areas have in common (in some abstract sense).

Category theory has been applied in other fields as well. For example, John Baez has shown a link between Feynman diagrams in Physics and monoidal categories.[7] Another application of category theory, more specifically: topos theory, has been made in mathematical music theory, see for example the book *The Topos of Music, Geometric Logic of Concepts, Theory, and Performance* by Guerino Mazzola.

More recent efforts to introduce undergraduates to categories as a foundation for mathematics include those of William Lawvere and Rosebrugh (2003) and Lawvere and Stephen Schanuel (1997) and Mirroslav Yotov (2012).

See also[edit]

- ***Category theory portal***
- ***Mathematics portal***

- Domain theory
- Enriched category theory
- Glossary of category theory
- Group theory
- Higher category theory
- Higher-dimensional algebra
- Important publications in category theory
- Lambda calculus
- Outline of category theory
- Timeline of category theory and related mathematics

Notes[edit]

1. **^** Some authors compose in the opposite order, writing fg or $f \circ g$ for $g \circ f$. Computer scientists using category theory very commonly write $f\,;g$ for $g \circ f$
2. **^** Note that a morphism that is both epic and monic is not necessarily an isomorphism! An elementary counterexample: in the category consisting of two objects A and B, the identity morphisms, and a single morphism f from A to B, f is both epic and monic but is not an isomorphism.