

Discussion Article

Acculturation, assimilation and mobility

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Abstract

Like the European immigrants who streamed into American cities at the start of the twentieth century, the immigration researchers who first studied them took their upward mobility for granted and focused on their assimilation. As a result, the published research virtually equated assimilation with mobility. Nonetheless, assimilation and mobility were and still are independent processes; immigrants can assimilate without being mobile and vice versa. Consequently, I ask, whether, when and how assimilation causes or leads to mobility; but also whether mobility causes or leads to assimilation. The article considers some empirical and conceptual questions that emerge when the two concepts are separated.

Keywords: Assimilation; acculturation; immigration; economic mobility; social mobility; assimilation resistance.

American empirical studies of ethnic assimilation began during a period of nearly universal upward mobility, and examined European immigrants virtually all of whom came here extremely poor and could only move up. In the process, the researchers conflated assimilation and mobility, and seem to have ignored the possibility that they were actually independent, if often co-existent or concurrent processes.

As a result, 'social scientists of the mid twentieth century . . . often wrote as if assimilation, acculturation and mobility were virtually the same thing.' (Kasinitz, Mollenkopf and Waters 2005, p. 4). In fact, Milton Gordon's classic analysis of types of assimilation made only a parenthetical reference to upward mobility (Gordon 1964, p. 46).

Alba (1985, pp. 15–16) was apparently one of the first to distinguish assimilation and upward mobility, suggesting that among Italian-Americans at least, 'widespread opportunities for mobility . . . will increase . . . assimilation.'

The recession of the late 1980s may have led researchers to consider the interplay between downward mobility and assimilation. Portes and Zhou's widely discussed analysis of segmented assimilation (1993) argued that in an economy which offered only unskilled jobs to poor second-generation young people, their assimilation could lead to their downward mobility. However, the two authors also introduced the concepts of upward and downward assimilation, thereby once more conflating assimilation and mobility.

Theorizing assimilation and mobility

Contemporary immigration patterns and the turbulence of modern economies and societies suggest that if researchers want to properly understand the workings of assimilation, their analyses should separate assimilation from mobility, and explore the connections (and disconnects) between them.

Separating the two concepts is required not only for theorizing but also for policy. Policy analysts and policy makers seeking to reverse the downward mobility of poor second- and third-generation immigrants must know exactly what assimilation, mobility and other policies will be needed.

This article begins by separating assimilation and mobility, and then considers whether and under what conditions assimilation causes or aids upward and downward mobility as well as the reverse; whether, and under what conditions upward and downward mobility cause or aid assimilation.

My analysis is exploratory, limited to America, eschews definitional complexities and is conceptually simpler than required for a systematic causal analysis. In addition, I shall deal mainly with assimilation and mobility of immigrant populations and groups, rather than of individuals, families and small groups, among whom all conceivable connections between assimilation and mobility are possible.

I follow Alba and Nee's unambiguous and widely accepted definition of assimilation: 'the decline of an ethnic distinction and its corollary cultural and social differences' (2003, p. 10).

However, I distinguish between cultural and social assimilation which, following an old Chicago tradition, I call acculturation and assimilation. Acculturation is largely up to the immigrants (and their descendants),¹ happens virtually automatically and is usually unintentional. Still, it can be intentional or purposive, as when parents push their children to do well in school or status-seekers learn the lifestyles of those whose status they seek to achieve.

Conversely, assimilation is often impossible without the immigrants being formally or informally accepted by the non-immigrants whom they seek to join. Although *open* associations admit everyone freely,

closed ones establish entry requirements and gatekeepers who can bar entry.

I define economic mobility simply as the move to a higher or lower level of income, wealth, education, employment status and standard of living; and social mobility as the movement to a higher or lower class or status position. Mobility is most likely to occur if economic opportunities are available or can be created, and economic growth is helpful if not necessary.

Immigrant populations typically move up economically by developing or occupying a new economic niche or by taking over an old one from its present occupants if these have moved up or retired. But the immigrants may also move up if economic growth or technological and social change encourage wholesale changes in the economy.²

However, acculturation and assimilation operate separately from mobility. Acculturation follows from the need or opportunity to adapt to new situations, beginning the moment immigrants arrive here and before their economic fortunes even have time to improve.

Assimilation usually proceeds more slowly but it too operates independently of mobility. Immigrants seek non-immigrant social connections when immigrant ones cannot meet their needs or interests, but the non-immigrants can be of the same status as immigrant ones. No one requires assimilating newcomers to join only formal or informal groups that are of higher or lower status.

Similarly, immigrants can move up economically and socially without having to acculturate or assimilate. Entrepreneurs and workers in ethnic enclaves or in niches in the larger economy can prosper (or suffer economically) without surrendering ethnic cultural practices or associations (Chin 2005).

Do acculturation and assimilation lead to upward mobility?

Acculturation and assimilation are processes by which immigrants become more like non-immigrants culturally and socially, but by themselves these processes cannot bring about upward mobility.

If economic opportunities for people with non-immigrant skills or ties are available, acculturated immigrants may be the first ones to move up. So too will those who resort to the right kind of intentional acculturation, such as obtaining training for the needed skills.

Attending technical or professional school is a form of intentional acculturation, but class also matters, for example possessing the educational prerequisites and funds to get the training (S. Lee 2005) Still, poor children can be persuaded to excel in school when parents press them to do homework (Portes and Rumbaut 2001, see also Louie 2005).

The economic context in which these processes take place cannot be forgotten however. Researchers should ask whether a growing economy encourages young people to accede to intentional acculturation demands from parents and other adults; and whether a declining economy reduces their willingness to learn, instead giving in to peer pressure to have fun or act oppositionally? Or does a declining economy heighten competition that makes immigrant youngsters study harder?

Intentional and unintentional acculturation are not always easy to distinguish. Moreover, immigrants differ in the ability to pursue intentional acculturation. Those who arrive here with upper middle-class skills and status can evidently do so more easily – or need to do less (Feliciano 2005) Nonwhite immigrants, especially black ones, face various racial obstacles, not so much to acculturating as to overcoming discrimination by organizations needed to achieve intentional acculturation.

Assimilation and upward mobility

Immigrants who can make themselves acceptable to, and make contact with the right non-immigrants can use these to pursue upward economic or social mobility.³ Making themselves acceptable requires obtaining the needed cultural and social skills; in that sense, mobility can be said to lead to assimilation. Even so, non-immigrants must have reasons or incentives to accept the immigrants.

To be sure, not much assimilation is required for occupational mobility if immigrants' skills are scarce and badly needed. Then employers may not even require that they speak English. However, under other conditions, work places can be closed organizations and gatekeepers can bar even eager assimilators from upward mobility. Other work places retain glass ceilings to cap upward mobility or permit harassment of fellow workers for this purpose.(Feagin and Sikes 1994).

In theory, assimilation into open organizations is the easiest route to upward mobility, except that such organizations do not necessarily offer higher social status. Immigrants cannot join private golf clubs solely by having learnt to play the game on a public golf course.⁴

Closed groups are more likely to offer social mobility, which is why gatekeepers screen applicants for admission and can reject those they deem unacceptable. However, since the passage of civil rights and other legislation, closed organizations have fewer ways to keep out the unwanted. In fact, assimilating immigrants can be useful as token representatives of minority groups or attractive as exotic others.

Residential assimilation, moving from immigrant to non-immigrant neighbourhoods is not equivalent to residential mobility. However, if

the new neighbourhoods offer 'better' schools than the old ones, parents can use them to help their children move up.

Asian and some other nonwhite immigrant populations have moved into white upper-middle-class suburban neighbourhoods. Many were already upper middle class in their country of origin, however, which may be why white gatekeepers have let them in. Black immigrants are still often barred; for them, white suburbia remains a closed organization. One result is a non assimilatory form of mobility that Neckerman, Carter and Lee (1999) call a minority culture of mobility.

Intermarriage and mobility

A half century ago, intermarriage was thought to be the final assimilatory step once the second or third generation had been admitted into less intimate native born social circles (Gordon 1964). Moreover, a number of such intermarriages involved immigrants marrying earlier immigrants, for example, Italians marrying Irish or Poles marrying Germans. Consequently, some studies suggested that upward mobility may have been one result, and even intent of intermarriage (Merton 1941).

Today, intermarriage between immigrants and non-immigrants is far more common than when Merton was writing. According to some estimates, as many as half of all Asian Americans, Latinos and native Americans are marrying whites (Alba and Nee 2003, pp. 263–267; Lee and Bean 2003.).

However, researchers will still have to determine whether and when these intermarriages represent upward mobility for the immigrant partner. They could be a by-product of earlier social or economic mobility by the newlyweds or their parents.

In addition, intermarriages which are the final assimilatory step must be distinguished from those in which the immigrant partner is not admitted into the social circles of the family of the non-immigrant spouse. If such couples join social circles consisting of other intermarrieds in the same boat, then the marriage may not have been accompanied by upward mobility and Gordon's thesis may still be accurate.

Acculturation, assimilation and downward mobility

Although the European immigrants who came here between about 1880 and 1924 sometimes arrived during and lived through recessions and depressions, researchers apparently had little interest in downward mobility among them. Today, however, researchers, including some favouring assimilation resistance, often propose that acculturation and assimilation can bring about downward mobility.

In the early 1990s, Portes and Zhou (1993), noting the tendency of Miami's Haitian-American youngsters to join African American gangs, suggested that the resulting assimilation was producing 'permanent poverty and assimilation into the underclass,' (p. 81; see also Zhou and Bankston, 1998).⁵

Likewise, I argued that in the process of acculturation, second-generation young people developed non-immigrant occupational aspirations, leading them to reject the cheap-labour jobs meant for immigrants and becoming candidates for unemployment and 'second-generation decline.' (Gans 1992).

Portes and Zhou pointed to peer pressure as the causal factor of the assimilation and downward mobility they uncovered; my decline hypothesis proposed standard second-generation acculturation as the explanation. Rumbaut (e.g. 2005) has studied rates of deviant behaviour among immigrants and their descendants and has identified Americanization, a form of acculturation, as the major factor in their downward mobility. These explanations still require testing however.⁶

Assimilation resistance and mobility

This analysis would be incomplete without considering the argument that full or partial – and presumably intentional – resistance against assimilation and particularly acculturation helps to achieve upward economic or social mobility.⁷

Such resistance is not new however. Examples can be found among all the groups in the European immigration; indeed, some returned to Europe because they rejected the cultural or religious adjustments they had to make here. Whether mobility considerations played a role is not clear however.

Studies of the post 1965 immigration suggest that both the New Orleans Viet Nameese community (Zhou and Bankston 1998) and some of New York's West Indians (Waters 1999) were able to maintain their past status through their assimilation resistance. However, their children were unable or unwilling to follow their parents' practices and wishes.

The New Orleans and New York findings suggest that coming with a middle-class status helps to make mobility-related resistance effective. So too perhaps is being an entrepreneur or a worker in a flourishing economic enclave or niche. The most successful assimilation resistance has taken place among two orthodox religious populations, both voluntarily ghettoized. One, the Amish who came here over a century ago but have almost always been economically mobile; the other the Chassidim, who came after World War II, have done less well.

If transnationalism can be viewed as a form of assimilation resistance, its effects on mobility need to be studied. Jobs that involve regular commuting between America and the country of origin presumably offer opportunities for upward mobility. So, perhaps, would participating in the modernization in one's community of origin (Smith 2005). If the commuters and modernizers are upwardly mobile, one would want to know whether they are acting transnationally because they prefer mobility in their immigrant community to achieving it in America.

Or is their transnational behaviour compensation for lack of mobility or for downward mobility in America? And do parents send their adolescents back to the home country in order to prevent the downward mobility associated with the gangs and other dangers of America's 'street culture' (Smith 2005).

Does mobility lead to acculturation and assimilation?

Reversing the direction of the causal arrow, I now ask whether mobility could bring about acculturation and assimilation. The basic answer must be positive, for even if the two processes are separate, economic mobility encourages acculturation and assimilation. Immigrants who add significantly to their disposable income or become successful entrepreneurs in the mainstream economy may be tempted to adopt class-appropriate non-immigrant lifestyles.

Perhaps economic success will persuade people to speak English more often or resort to the standard middle-class version of the language. They might eat more often at non-ethnic restaurants and participate in more typically American leisure activities.

Occupationally mobile immigrants may have to adopt such lifestyles to accommodate colleagues or customers, although in that case, they might turn to American practices with them while maintaining immigrant ways at home.

Mobility and assimilation

Upward economic mobility is often accompanied by invitations to join the closed business organizations and social clubs of higher status non-immigrants. Occupational and business requirements may turn invitations into obligations, but in each case, the result is likely to be some degree of assimilation, or at least work-related assimilation.

Moreover, the immigrant generation's upward mobility often affects the occupational choices of the next; for example, the children of immigrant shopkeepers do not often take over parental stores (J. Lee 2002).

As during the European immigration, the children of the post-1965 newcomers initially head for the 'practical' professions, including those in which facility in English is less necessary, for example, engineering and accountancy. The more acculturated next generation may then head for more prestigious professions such as law school, medical school or the academic disciplines.

However, one of the most interesting effects of mobility on assimilation is racial 'whitening'. When the Southern and Eastern European immigrants improved their economic status, their once swarthy skins apparently looked whiter to the rest of white America (Ignatiev 1995, Brodtkin 1998). For many, the process began in the 1920s, continued during the 1940s and for soldiers returning from World War II, was reinforced by the educational and other benefits provided by the federal 'G.I. Bill of Rights'. Thus, as immigrants' skins whitened, the people in them were accepted by non-immigrant America and those who wanted to do so were able to assimilate.⁸

Their acculturation during the decades prior to the 1940s undoubtedly facilitated their later assimilation, but it did not cause their mobility. The most mobile were the Jews, mainly because unlike their fellow immigrants, they had already acquired urban and industrial job skills before coming to America (Steinberg 1981). Today, East and South Asian immigrants are more mobile than *their* fellow immigrants largely because many came with professional training and skills. Frequently called a model minority, they currently appear to be undergoing a similar whitening, as are Latinos and others already settled in the middle class.

Downward mobility, acculturation and assimilation

My earlier discussion of Portes and Zhou (1993) and my own work (Gans 1992), saw the downward mobility of young second-generation nonwhites as effects of assimilation and acculturation, but the reverse causal process may also have taken place. Most of the downward mobility of these populations was, however, also an effect of their poverty, stigmatization as well as racial discrimination, poor schools and shrinking labour markets to which they were exposed.

These conditions – and their position in what Portes and Zhou (1993) call the 'hourglass economy' – may be partly responsible for their joining and identifying with African Americans who suffer from the same inequities and injustices. Consequently, their acculturation and assimilation is, or is also, an effect of their downward mobility.⁹

Moreover, if present economic trends continue, and more of the declining total number of jobs become cheapest-labour jobs, then the second-generation decline I observed in the early 1990s may turn into third-generation decline as well.

At the same time, downward mobility probably also results in acculturation and assimilation among immigrant welfare recipients. Unless jobless single parents can obtain economic and other support within the immigrant community, they must learn to deal with welfare, child welfare and related agencies. The result is not only acculturation into the practices of the American poverty bureaucracy, but assimilation into the often multi-ethnic and multiracial support groups sometimes available to welfare recipients.¹⁰

Downward mobility has one ironic effect. Early assimilationist theorizing assumed that immigrants would eventually assimilate into a WASP America. In fact, of course, they have moved into a multi-ethnic, post-immigrant American mainstream. Only downwardly mobile black immigrants now assimilate into an American population whose ancestors, although neither white nor Anglo-Saxon, were Protestants some of whom have been here since before the Declaration of Independence was signed.

Mobility and assimilation resistance

Assimilation resistance has so far been found largely among first generation immigrants (e.g. Gibson 1988, Zhou and Bankston 1998), and therefore before immigrants could become upwardly mobile.

Many successful immigrant and ethnic enterprises stay in the ethnic enclave, and some must stay in order to remain successful. In that case, continued loyalty to immigrant culture and society is probably better explained by business needs and related social obligations than by mobility.

Moreover, assimilation resistance usually offers few incentives or rewards to the upwardly mobile. Only rarely does such resistance lead to higher cultural or social status than that available from joining non-immigrant America.

True, highly mobile and thus very affluent immigrants who supply their communities with financial and political support do not have to be assimilation resisters, even if they remain residents of the immigrant community. However, they can continue that support – and obtain prestige, honour and other symbolic rewards – even if they leave the ethnic community.

Sometimes, immigrants appear to stop acculturating; then their activities are generally thought of as an ethnic revival. However, most ethnic revivals have turned out to be temporary, the result of some well publicized activities by a small number of assimilation resisters and others.

For example, the ethnic revival of the 1960s was in part a panethnic alliance of working-class white ethnics fearful that the War on Poverty

funds going to the black community might result in their own downward mobility.

Actually, downward mobility, or the absence of mobility may be a greater spur to assimilation resistance than upward mobility. The poorest populations, in both the European and post-1965 immigration, sometimes retain more immigrant ways than their more affluent co-ethnics, although frequently as a result of isolation rather than loyalty to, or the cultural support obtained from, immigrant tradition.

Downward mobility may also generate some kinds of transnationalism. Thus, some immigrants turn to community building in their communities of origin after failing to achieve upward mobility in America (Smith 2005).

Acculturation and assimilation as generic concepts

Working through the interplay between mobility and acculturation and assimilation suggests that the latter two concepts and the processes they describe transcend immigration, ethnicity and race. Both concepts actually refer to people's adaptation to changing conditions, and all those who undergo any kind of adaptation are thus likely to acculturate and assimilate as a result.

Acculturation and assimilation take place among rural Americans who move to the cities and singles who become couples and then parents. They also occur among upwardly or downwardly mobile populations, whether they are junior faculty who are promoted to tenure or downsized auto workers who spend the rest of their work lives as security guards.

The acculturation and assimilation processes that accompany these instances of mobility are probably not very different from those experienced by immigrants and their descendants. To be sure, the cultures and social structures which rural Americans, singles, junior faculty and blue-collar workers leave do not erode or disappear. That may help to explain why their adaptations have not been viewed as instances of acculturation and assimilation. However, doing so would open up numerous comparative research possibilities even while enriching the study of immigrant acculturation and assimilation. Then immigration research might move closer to whatever main-streams remain in sociology and the other social sciences.

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Notes

1. When I use the term immigrants, I include their second- and even third-generation descendants, but which generations carry out the various forms of acculturation and assimilation, and pursue the various forms of mobility still remains a partly unanswered question.
2. A static economy may discourage incumbent niche occupants from moving up or may force their children to take over the niche, thereby also discouraging immigrant upward mobility.
3. Undoubtedly some intentional acculturation will be required to access and gain acceptance from the right contacts.
4. Admittedly, the public course can teach them to play the game they need to get into the private club.
5. For studies questioning these findings, see Perlmann and Waldinger (1997) and Waldinger and Feliciano (2004).
6. For example, Sullivan (1989) showed that youngsters from immigrant homes settled for immigrant jobs after they became parents.
7. Selective and consonant acculturation are examples of partial acculturation. (Gibson 1988, Portes and Rumbaut 2001).
8. The Irish who came to America early in the 19th century were redefined as white by driving blacks out of the occupations and industries in which they had served as the cheapest labor (Ignatiev 1995).
9. Whether the second generation Haitians and West Indians who assimilate into African American groups are therefore downwardly mobile is actually an empirical question that still needs to be studied. Clearly they are joining a stigmatized population but does that make them downwardly mobile?
10. The downward mobility of welfare recipients is also an instance of gendered mobility. (Feliciano and Rumbaut 2005). The relationships between gendered mobility, upward and downward and acculturation and assimilation remain to be studied.

References

- ALBA, RICHARD D. 1985 *Italian-Americans; Into the Twilight of Ethnicity*, Englewood Cliffs, NJ: Prentice Hall
- ALBA, RICHARD D. and NEE, VICTOR 2003 *Remaking the American Mainstream: Assimilation and Contemporary Immigration*, Cambridge, MA: Harvard
- BRODKIN, KAREN 1998 *How Jews Became White Folks: & What That Says about Race in America*, New Brunswick NJ: Rutgers University Press
- CHIN, MARGARET M. 2005 *Sewing Women: Immigrants and the New York City Garment Industry*, New York: Columbia
- FEAGIN, JOE R. and SIKES, M. P. 1994 *Living with Racism; The Middle Class Experience*, Boston MA: Beacon
- FELICIANO, CYNTHIA 2005 'Assimilation *from* what: The origins of immigrant and mobility patterns of the new second generation', unpublished paper prepared for the 2005 meeting of the American Sociological Association
- FELICIANO, CYNTHIA and RUMBAUT, RUBEN G. 2005 'Gendered paths: educational and occupational expectations and outcomes among adult children of immigrants', *Ethnic and Racial Studies*, vol. 28, no. 6, pp. 1087–1118
- GANS, HERBERT J. 1992 'Second-Generation decline: scenarios for the economic and ethnic futures of the post-1965 american immigrants', *Ethnic and Racial Studies*, vol. 15, no. 2, pp. 173–92
- GIBSON, MARGARET A. 1988 *Accommodation Without Assimilation: Sikh Immigrants in an American High School*, Ithaca NY: Cornell

- GORDON, MILTON 1964 *Assimilation in American Life: The Role of Race, Religion and National Origin*, New York: Oxford
- IGNATIEV, NOEL 1995 *How the Irish Became White*, New York: Routledge
- KASINITZ, PHILIP, MOLLENKOPF, JOHN H. and WATERS, MARY C. (eds) 2005, *Becoming New Yorkers: Ethnographies of the New Second Generation*, New York: Russell Sage
- LEE, JENNIFER 2002 *Civility in the City: Blacks, Jews and Koreans in Urban America*, Cambridge MA: Harvard University Press
- LEE, JENNIFER and BEAN, FRANK D. 2003 'Beyond black and white: remaking race in America', *Contexts*, vol. 2, no. 3, pp. 26–33
- LEE, SARA S. 2005 'Class matters: racial and ethnic identities of working and middle-class second generation Korean-Americans in New York City', in Philip Kasinitz, John H. Mollenkopf and Mary C. Waters (eds), *Becoming New Yorkers: Ethnographies of the New Second Generation*, New York: Russell Sage, pp. 313–38
- LOUIE, VIVIAN 2005 '“Being practical” or “doing what I want”: the role of parents in the academic choices of Chinese Americans', in Philip Kasinitz, John H. Mollenkopf and Mary C. Waters (eds), *Becoming New Yorkers: Ethnographies of the New Second Generation*, New York: Russell Sage, pp. 79–109
- MERTON, ROBERT K. 1941 'Intermarriage and the social structure: fact and theory', *Psychiatry*, vol. 4, pp. 361–74
- NECKERMAN, KATHRYN M., CARTER, PRUDENCE and LEE, JENNIFER 1999 'Segmented assimilation and minority cultures of mobility', *Ethnic and Racial Studies*, vol. 22, no. 6, pp. 945–65
- PERLMANN, JOEL and WALDINGER, ROGER 1997 'Second generation decline? The children of immigrants, past and present: a reconsideration', *International Migration Review*, vol. 31, no. 4, pp. 891–920
- PORTES, ALEJANDRO and RUMBAUT, RUBEN G. 2001 *Legacies: The Story of the Immigrant Second Generation*, Berkeley CA: California
- PORTES, ALEJANDRO and ZHOU, MIN 1993 'The new second generation: segmented assimilation and its variants among post 1965 immigrant youth', *Annals of the American Academy of Political and Social Science*, vol. 530, pp. 74–96
- RUMBAUT, RUBEN G. 2005 'Turning points in the transition to adulthood: determinants of educational attainment, incarceration and early childbearing among children of immigrants', *Ethnic and Racial Studies*, vol. 28, no. 6, pp. 1041–86
- SMITH, ROBERT C. 2005 *Mexican New York: Transnational Lives of New Immigrants*, Berkeley CA: California
- STEINBERG, STEPHEN 1981 *Ethnic Myth: Race, Ethnicity and Class in America*, Boston: Beacon
- SULLIVAN, MERCER L. 1989 *'Getting Paid': Youth Crime and Work in the Inner City*, Ithaca NY: Cornell
- WALDINGER, ROGER and FELICIANO, CYNTHIA 2004 'Will the new second generation experience “downwards assimilation”? Segmented assimilation re-assessed.', *Ethnic and Racial Studies*, vol. 27, no. 3, pp. 376–402
- WATERS, MARY C. 1999 *Black Identities: West Indian Immigrant Dreams and American Realities*, Cambridge MA: Harvard
- ZHOU, MIN and BANKSTON, CARL L. III 1998 *Growing Up American: How Vietnamese Children Adapt to Life in the United States*, New York: Russell Sage

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