A BIBLIOMETRIC ANALYSIS OF THE POSSIBLE CONVERGENCE OF HETERODOX ASSOCIATIONS

Felipe Almeida
Universidade Federal do Paraná

Victor Cruz-e-Silva
Universidade Federal de Uberlândia

Maríndia Brites
Fundação de Estudos Sociais do Paraná

Resumo: O artigo analisa potenciais convergências teóricas e metodológicas compartilhadas por três associações heterodoxas - Association for Evolutionary Economics (AFEE), Union for Radical Political Economics (URPE) e Association for Social Economics (ASE). Analisamos as proximidades na abordagem e a potencialidade para teorias e métodos compartilhados com base em artigos publicados pelos principais periódicos das associações entre 2010 e 2019. Usando bibliometria, os artigos são analisados em termos de questões teóricas e metodológicas compartilhadas por essas associações heterodoxas. Nosso artigo conclui, em primeiro lugar, que um possível ponto de convergência entre a AFEE, a URPE e a ASE são críticas ao mainstream e à Nova Economia Institucional. Lodo seria possível construir abordagens comuns baseadas em tais críticas. Em segundo lugar, as críticas ao capitalismo e os estudos sobre o desenvolvimento econômico poderiam servir de ponto de convergência para a AFEE e a URPE. Terceiro, a ASE parece ser mais aberta a uma pluralidade de abordagens heterodoxas quando comparada a AFEE e a URPE, isso poderia abrir espaço para outros pontos de convergência. No entanto, as diádes ASE-AFEE e ASE-URPE ainda não exploraram essas oportunidades de convergência.


Códigos JEL: B50, B51, B52, B55

Abstract: This paper is a study on the possible common theoretical and methodological approaches shared by three heterodox associations—Association for Evolutionary Economics (AFEE), Union for Radical Political Economics (URPE), and Association for Social Economics (ASE). We analyze their closeness and potentially common approaches as reported in papers published by the associations’ main journals from 2010 to 2019. Using bibliometrics, the papers are analyzed in terms of convergent theoretical and methodological issues shared by these heterodox associations. Our paper concludes, first, that building alternative approaches based on a criticism of both mainstream and New Institutional Economics is a possible point of convergence for AFEE, URPE, and ASE. Second, criticism of capitalism and studies on economic development could act as a convergence point for AFEE and URPE. Third, ASE seems to be more open to heterodox approaches than AFEE and URPE, and can make room for other convergence points. However, the ASE-AFEE and ASE-URPE dyads have not yet explored such opportunities for convergence.

Keywords: Institutional Economics, Radical Political Economics, Social Economics, Heterodox Economics, Bibliometrics.

JEL Classification Codes: B50, B51, B52, B55

Área 1 - História do Pensamento Econômico e Metodologia

1. Introduction
From 1865 to 1909, the Allied Social Science Association (ASSA) was an association of birthing disciplines in the United States: sociology, history, political science, statistics, and economics. The American Economic Association (AEA), a part of the ASSA, dealt with economics (Coats 1985 and Dolfmsa 2008). Over time, disciplines, as well as their associations, became more independent (Clary 2008 and Dolfmsa 2008). During the 1930s, the ASSA was revived, but became an “association of associations”
controlled by the AEA (Clary 2008). This paper relies on three associations that became members of the AEA-led ASSA: the Association for Evolutionary Economics (AFEE), the Union for Radical Political Economics (URPE), and the Association for Social Economics (ASE). The AFEE was created in 1967 by Original Institutionals who were dissatisfied with the mainstreaming of American economics by AEA. The Original Institutionals felt they had been sidelined by the AEA and its journal, the American Economic Review (AER), as their papers were accepted neither for the AEA’s conference program nor for the AER. The Original Institutionals therefore decided to establish their own association, which led to the creation of AFEE (Cavalieri and Almeida 2017). The URPE was a product of academic radicalism in the United States. Left-leaning political economists were interested in an agenda involving social movements associated with civil rights, antiwar, oppressed minorities, and intellectual movements that espoused theoretical and policy issues that would challenge the status quo. The URPE was founded in 1968 (Mata 2014). The ASE was founded on a reformulation of the Catholic Economic Association (CEA), which emerged in 1941, with the aim of introducing ethics into economic reality. Later, in 1970, the association was renamed ASE in order to avoid any explicit connections with Christian ethics.

The annual meetings of the AFEE, the URPE, and the ASE take place at the huge ASSA conference in early January. The most notable feature of the conference was that the AEA retained its dominant voice—the AEA holds sway over the ASSA. According to AEA rules, the number of sessions of an association is established according to the number of session attendees in the previous years—the ASSA uses the median attendance at an association’s sessions over the preceding four years to determine whether that association should retain, lose, or get additional sessions. These rules put heterodox associations in a difficult spot. From the sociological perspective of mainstream economics, attendee-session rules are always likely to result in fewer sessions assigned to heterodox associations. According to its sociological definition, the word “mainstream” refers to ideas, concepts, and approaches that are held by the majority of individuals in a profession (Dequech 2007; see also Colander et al. 2004). Hence, mainstream sessions would always have more attendees than heterodox sessions. In such circumstances, combining forces has been deemed a “survival strategy.” The main survival strategy thus would be to focus on the joint sessions, as they would have attendees from more than one heterodox association. Another survival strategy is to hold a pre-ASSA conference, the International Confederation of Associations for Pluralism in Economics (ICAPE) meeting. The ICAPE meeting is held in the same city as the ASSA conference, usually a day before; if the ASSA conference is held early, the ICAPE meeting occurs a day after. The main purpose is to have another forum—free from AEA rules—that allows ASSA heterodox attendees to interact. These survival strategies can be employed alongside Lee’s (2009) proposal to integrate the heterodox approaches.

The goal of this paper is to study the closeness and potentially common approaches shared by the AFEE, the URPE, and the ASE by analyzing studies by members of these associations in the last decade from 2010 to 2019. The AFEE publishes the Journal of Economic Issues (JEI), the URPE the Review of Radical Political Economics (RRPE), and the ASE the Review of Social Economy (ROSE). We performed a bibliometric analysis of the papers published by JEI, RRPE, and ROSE in order to examine what areas of interest, theories, and approaches have been dealt with by members of the AFEE, the URPE, and the ASE in these journals. Our sample comprises data from the Scopus database. Commensurability among the three journals was one of our main concerns. Because of this, we relied on data from 2010 to 2019, since the information about the ROSE papers prior to 2010 appears to be inaccurate; the data after 2010 also provide

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1 From 1865 to 1909, the association was called the Allied Social Science Association. In the 1930s, at the time of its revival, its name changed to Allied Social Science Associations—plural—to denote its change to “an association of associations.”

2 We retrieved information regarding the association’s renaming from its website (https://socialeconomics.org/about/history/) on October 25, 2020.

3 It should be noted that some kind of pre- or post-conference meetings was important for heterodox initiatives in the past as well. The group that founded the AFEE organized “rump sessions” after the ASSA conference. The same is true in relation to the organization of the Association for Institutional Thought (AFIT)—an offspring of the AFEE. During the 1970s, Original Institutionals were dissatisfied with the rump sessions organized by the AFEE at the Western Social Science Association (WSSA), which supported the creation of the AFIT (Almeida, 2016).

4 We have assumed that papers published in a journal sponsored by a heterodox association reflect the economics favored by the association’s membership.

5 The ASE also publishes the Forum for Social Economics. However, as we are comparing heterodox journals, we confined our analysis to journals that started with the foundation of the association. In the case of the ASE, this is ROSE.
a good idea of the currently debated issues in the journals. After data collection, we conducted a pre-analysis organization of the database. Analysis was performed using the bibliometrix package in R Studio (see Aria and Cuccurullo 2017).

In the next section, we analyze the cross-fertilization between JEI, RRPE, and ROSE, as well as the journals referenced by them. We performed this exercise through an examination of the most frequently cited journals in the papers published in each journal. In the third section of this paper, we present a thematic map for each of our journals of interest based on their papers’ most common keywords; an examination of keywords gives us an idea of the content of the papers. The fourth section is a description of co-citation networks based on studies frequently cited together. In a co-citation network, the most common pairs of cited studies are placed together in clusters that illustrate the most common references. The references in a cluster represent the most relevant references for a journal’s particular theme. This paper closes with a few concluding remarks.

2. Most Cited Sources

Based on the journals most cited by the papers published in JEI, RRPE, and ROSE from 2010 to 2019, the Most Cited Sources allows us to examine: (1) the cross-fertilization among papers published by JEI, RRPE, and ROSE; and (2) the shared references (papers from other journals) that we assume to be an indicator of convergence in analytical bases6. In Table 1, we summarize the data on the most cited journals. Table 1 also gives the ranked list of the top 20 most cited journals and the percentage of citations for each of the top 20 journals within papers published by JEI, RRPE, and ROSE from 2010 to 20197.

<table>
<thead>
<tr>
<th>Source of cited papers</th>
<th>Journal of Economic Issues</th>
<th>Review of Radical Political Economics</th>
<th>Review of Social Economy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source of cited papers</td>
<td>%</td>
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<tr>
<td>15. Review of Radical Political Economics</td>
<td>1.41</td>
<td>New Left Review</td>
<td>2.52</td>
</tr>
<tr>
<td>18. Review of Social Economy</td>
<td>1.30</td>
<td>Journal of Economic Literature</td>
<td>2.34</td>
</tr>
<tr>
<td>19. World Development</td>
<td>1.30</td>
<td>Economic and Political Weekly</td>
<td>2.28</td>
</tr>
</tbody>
</table>

Source: Elaborated by the authors.

Table 1 shows that there are similar features in the journals cited by JEI, RRPE, and ROSE. The most cited journal in each case is the journal itself. Papers published by JEI were cited most frequently by papers published in JEI, at 40.12%. The same is true of both RRPE (27.39%) and ROSE (18.25%). Additionally, there are mainstream journals in the top 20s of all three journals. As the upper half of Table

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6 By common references, we mean the economics viewpoint promoted by the journals that published the papers, and not the papers themselves.

7 Percentages in Table 1 do not refer to the entire universe of journals that published papers cited by JEI, RRPE, and ROSE. Percentages indicate exclusively the representativeness of the top 20 journals whose papers were cited by JEI, RRPE, and ROSE. Hence, the percentages refer only to data from the top 20 journals.
1 indicates, mainstream journals enjoy a strong presence among the top 10 most cited journals. The *JEI*’s top 10 includes six mainstream journals, while *RRPE*’s includes four, and *ROSE*’s includes six. In terms of percentage, 32.45% of *JEI* citations in the top 20 most cited journals are to mainstream journal papers. Papers published by *JEI* itself account for 40.12%, while 27.43% of the papers cited in *JEI* are from other heterodox journals. In the case of *RRPE*, 23.12% of cited papers are mainstream and 49.19% are from heterodox journals; 27.39% of *RRPE* papers are published by *RRPE* itself. Of the papers cited in *ROSE*, 40.53% are from mainstream journals, 41.22% are from others heterodox journals, and 18.25% are from *ROSE* itself. It is interesting to notice that, within this classification, the most common references in *JEI*, *RRPE*, and *ROSE* are studies published in mainstream journals.

Among mainstream journals, the *AER* is the most frequently represented. The *AER* is the second most cited journal in *JEI* and *ROSE* (10.95% and 10.88%, respectively), and the third in *RRPE* (8.29%). This may be explained by the following hypotheses. Hypothesis #1: as the *AER* is a long-standing journal, many of the papers cited were published in the first half of the 20th century, when economics in the United States was far more pluralistic; heterodox approaches could therefore be accommodated in the *AER* (see Morgan and Rutherford 1998)8. Hypothesis #2: *AER* papers are frequently cited in order to evaluate heterodox opinions critically, or, in some cases, heterodox approaches deal with a mainstream perspective in parallel with the introduction of an alternative perspective. This applies to the *Quarterly Journal of Economics*, the *Economic Journal*, and the *Journal of Political Economy* as well; these too are long-life mainstream journals that are present in the top three rankings. There are two other mainstream journals, the *Journal of Economic Perspectives* and the *Journal of Economic Literature*, which figure in the rankings. As the former was created in 1987 and the latter in 1969 and both have always been sponsored by the AEA, only the second hypothesis applies in their case.

A possible explanation for the references to mainstream journal papers lies in the nature of the literature on heterodox economics. For instance, Davis (2008) advances the view that the heterodox approach arises from a rejection of core mainstream ideas, which may be summarized as (1) rationality, (2) methodological individualism, and (3) equilibrium. In general, heterodox economics is based on (A) institutions, (B) history, and (C) socially embedded individuals, all of which contradict mainstream positions as expressed in (1), (2), and (3) (Davis, 2008). However, to delineate the conflict among (1), (2), and (3) and (A), (B), and (C), heterodox studies need to refer to orthodox papers; thus, Davis’s (2008) theory reinforces our hypothesis #2. Wrenn’s (2007) and Mearman’s (2011) empirical studies on heterodox economics present similar conclusions. The former interviewed historians of economics, while the latter carried out a questionnaire survey among members of the *Association for Heterodox Economics* (AHE). Wrenn’s (2007) and Mearman’s (2011) results suggest that heterodox economics is a rejection or a criticism of mainstream economics, but that in rejecting or criticizing mainstream economics, a set of alternative ideas is offered9. Lee (2009, 2011, and 2012) called these positive alternatives. From a technical perspective, dealing with mainstream papers to build their own analysis can be seen as a bad strategy for heterodox approaches, because citing papers published in mainstream journals result in making these journals more representative in terms of “impact factor.” However, in order to build an unconventional approach, references to the conventional approach may be mandatory or illustrative; thus, Lee’s theory also reinforces our hypothesis #2. The significant presence of mainstream journals among the citations in the

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8 For example, two of AFEE’s founding members, Clarence Ayres and Allan Gruchy, had papers published in the *AER*—see Ayres (1951 and 953) and Gruchy (1939 and 1958).

9 Wrenn (2007) is a study on the consistency among historians of economic thought about what constitutes heterodox economics. Mearman (2011) is an empirical exercise on the nature of heterodox economics. Indeed, the definition and nature of heterodox thought is not clear, and there is no single definition for the term “heterodox” (Wrenn 2007). Nevertheless, there has been some degree of convergence in the literature, according to which one of the defining features of heterodoxy is to provide a critical perspective to mainstream economics. Backhouse (2000 and 2004), Colander et al. (2004), and Dequech (2007) have established a sociological way to identify heterodox studies: heterodoxy is that which diverges from mainstream economics, which comprises the ideas that the profession’s elite considers acceptable and dominant in the main academic institutions, organizations and scientific journals. Lawson (2004 and 2006) and Davis (2008), alternatively, use a more ontological perspective to define the nature of heterodox economics. Lawson (2004 and 2006) argues that the antagonism of heterodox economics to contributions from the mainstream manifests itself through a rejection of the deductivist method. Davis’s (2008) perspective has been stated at the beginning of this paragraph.
JEI, RRPE, and ROSE, therefore, is not unusual and may be seen as logical; we can, hence, affirm that the literature on heterodox economics supports Hypothesis #2.

There are three heterodox journals in all three rankings: World Development, Cambridge Journal of Economics (CJE), and the JEI. World Development is a thematic journal with and interdisciplinary slant that promotes global economic development. World development is a shared theme running through the papers published by JEI, RRPE, and ROSE. However, it is important to note that World Development ranks 19th (1.3%) in the JEI’s ranking, 16th (2.52%) in RRPE’s, and sixth (4.95%) in ROSE’s. The CJE is, in fact, more representative than World Development, as it ranks fourth (6.06%) in JEI’s ranking, second (13.57%) in RRPE’s, and seventh (4.89%) in ROSE’s. The fact that the JEI features in all three rankings means that authors of the papers published in both RRPE and ROSE take into consideration AFE’s studies when drafting their own papers. The JEI ranks fifth (4.68%) in RRPE’s list of rankings and ninth (4.84%) in ROSE’s. It is possible that there is some cross-fertilization, as both RRPE and ROSE are in JEI’s ranking as well. The RRPE ranks 15th (1.41%), while ROSE ranks 18th (1.3%) in JEI’s ranking. However, there is no cross-fertilization between RRPE and ROSE as far as the top 20 most cited journals is concerned\(^\text{10}\).

In summary, the ranking of the top 20 most cited journals by JEI, RRPE, and ROSE show that (1) papers published by mainstream journals are a shared source of reference, and the creation of a heterodox approach based on a rejection or a criticism of mainstream economics can be a convergent issue among all three journals, and (2) there is cross-fertilization between JEI and RRPE, and JEI and ROSE; however, there is no noticeable cross-fertilization between RRPE and ROSE.

### 3. Thematic Maps

The thematic maps for each journal, presented in Figure 1, confirm our perception thus far. Thematic maps are based on the keywords of the papers published in each journal. Keywords are the terms that best describe the content of papers, as they represent authors’ self-identification of their research. Thus, thematic maps build clusters of co-occurring keywords in a group of papers. Accordingly, co-occurring keywords form clusters, and these clusters form a network.

In our case, the thematic map is a visual aid that allows us to organize papers based on how the authors self-identify their research, and, further, how their research present itself within the network of each journal. The clusters in the thematic map are plotted as spheres that represent specific themes based on two axes: density and centrality. Density, the vertical axis, indicates the internal strength of a particular cluster in relation to the other clusters of co-occurring keywords in the papers published by the journal. It is characterized by the strength of the connections between keywords. Density is, therefore, a measure of the internal cohesion of a theme, as the strength of a cluster is associated with the frequency of a certain group of keywords being placed together. A high-density theme indicates that a group of keywords is frequently associated with the same papers (Callon, Courtial, and Laville 1991; Cobo et al. 2011).

Centrality, the horizontal axis, on the other hand, measures how a theme relates to other themes within a network. Accordingly, as it points out to the external ties between themes, centrality measures the relevance of a theme in the development of a research field (Callon, Courtial, and Laville 1991; Cobo et al. 2011). Hence, the thematic map plots two kind of relationship among keywords: the strength of the connections between keywords within a group (density) and among groups (centrality). Consequently, there are four quadrants. The upper-right quadrant indicates high density and high centrality, which represents the motor themes of the journal. The upper-left quadrant presents high density and low centrality, and represents specialized themes, as these clusters have strong internal connections but weak external connections. The lower-left quadrant, marked by marginal and weakly developed themes, portrays low density and low centrality, which answers for emerging or declining themes. Finally, the lower-right quadrant indicates high centrality and low density; hence, clusters in this quadrant are transversal and

\(^{10}\) Table 1 also highlights the fact that JEI, RRPE, and ROSE have specific references to each journal. JEI’s ranking points to journals associated with Original Institutionalis (Journal of Institutional Economics, 10th position, 2.67%) and evolutionism (Journal of Evolutionary Economics 12th position, 1.87%). RRPE’s ranking refers to journals related to radicalism, such as Capital (4th position, 4.68%) and New Left Review (5th position, 2.52%). ROSE’s ranking includes journals about ethics (Journal of Business Ethics, 11th position, 4.09%) and sociological issues (American Sociological Review, 13th position, 3.05%; American Journal of Sociology, 15th position, 2.72%). Additionally, ROSE is an interdisciplinary journal that shows a more eclectic top 20 of most cited journals per field.
represent the basic themes of the journal, that is, those themes of great importance but low development (Cobo et al. 2011).

**Figure 1 – Thematic maps**

Thematic Map of the *Journal of Economic Issues*

Thematic Map of the *Review of Radical Political Economics*

Thematic Map of the *Review of Social Economy*

Source: Elaborated by the authors

In Figure 1, we find two of *JEI*’s motor theme clusters in the upper-right quadrant. One cluster is composed of the keywords “development,” “gender,” and “entrepreneurship” and the other is associated with “sustainability.” The *RRPE*’s motor theme clusters are “development,” “globalization,” and “precarious work.” Two of *ROSE*’s motor theme clusters are “justice” and “trust.” Based on the keywords in *ROSE*’s motor themes clusters, it is difficult to see a connection with the *JEI*’s and the *RRPE*’s motor themes; in fact, there does not appear to be any connection between the *JEI*’s and the *RRPE*’s clusters. In order to uncover a connection, we could assume that the keywords “justice” and “trust” are associated with “development”; however, as “development” is not in any of *ROSE*’s clusters, this assumption would be
inaccurate. A cluster composed of one keyword only in the upper-right quadrant suggests that the keyword in questions highlights a motor theme, with no association with other keywords. Hence, we may assume that “justice” and “trust” are ROSE’s motor themes, while “sustainability” is a motor theme in JEI, but we cannot make any further assumptions.

The motor themes suggest a possible thematic connection between the JEI and the RRPE, as “development,” “gender,” and “entrepreneurship” comprise a cluster in the former and “development,” “globalization,” and “precarious work” in the latter. We could assume that “development” is an important issue in both journals, but each employs different theoretical perspectives. The JEI papers focus on gender and entrepreneurship. Gender has been used by Original Institutionalists since Veblen to study the consequences of a sexist and patriarchal society. Entrepreneurship has also been a subject of analysis since the start of critical business analysis. If we combine all three keywords, we could understand the motor themes to refer to the gender dimension in entrepreneurial activity and its association with development. We believe that Warnecke’s papers are a good illustration (see Warnecke 2013 and 2017, and Padgett and Warnecke 2011) of this relationship. Regarding the RRPE clusters, in addition to “development,” we find the keywords “globalization” and “precarious work,” which could indicate a radical perspective on economic development. According to this viewpoint, development may be perceived as a worldwide production structure that affects labor conditions, as described in De Angelis and Harvie (2008) and Ricci (2019). Thus, one of the motor themes of the JEI and the RRPE could offer a possible thematic convergence point. However, the theoretical approaches of the two journals are not the same.

In the JEI thematic map, we find a cluster at the borderline between the upper-right and upper-left quadrants. The cluster is composed of “monetary policy,” “vested interests,” and “fiscal policy,” which may be interpreted as both motor and specialized themes having internal connections with the cluster, as well as connections with keywords outside the cluster. Another specialized theme in JEI covers “income inequality,” “power,” and “full employment,” while yet another one includes only one keyword—“economic policy.” In the RRPE thematic map, there are four clusters of specialized themes; their keywords are: (1) “capitalism” and “class struggle,” (2) “heterodox economics” and “India,” (3) “austerity,” and (4) “sustainability” and “climate change.” It is clear that there is no similarity between JEI’s specialized themes and those of RRPE. However, one of the JEI’s motor themes is based on the keyword “sustainability,” while one of RRPE’s specialized themes includes “sustainability” and “climate change.” Therefore, we may conclude that sustainability is a relevant subject in both journals. In RRPE, however, it is associated with a debate on climate change. ROSE’s only specialized cluster comprises the single keyword “exploitation,” which renders it difficult to conduct an analysis of the entire cluster.

In the lower-left quadrant of the JEI thematic map, there are three clusters: (1) “uncertainty,” “complexity,” and “John R. Commons;” (2) “social provisioning,” and (3) “Russia.” We may conclude that these are the emerging or declining themes in JEI. RRPE shows analytical stability in terms of themes as there are no emerging or declining themes in the journal (its lower-left quadrant is empty). In ROSE, the emerging or declining themes are: (1) “happiness,” “poverty,” and “identity,” and (2) “religion,” “social capital,” and “institutions.” We believe that emerging or declining themes cannot be used to indicate connection among journals. It is possible to argue that there is a ROSE cluster of emerging or declining themes composed of the keyword “institutions,” as well as a JEI cluster in the lower-right quadrant. However, the ROSE cluster comprises “religion,” “social capital,” and “institutions,” whereas the JEI cluster includes “institutions,” “regulation,” and “evolutionary economics.” If we consider all three words that comprise each cluster, it is clear that these refer to different kinds of themes. In this regard, it is worth noting that the analysis of clusters located in the lower-left quadrant of a thematic map represents an evaluation of the themes that are either rising toward the core of or disappearing from each journal’s discussed issues. As the lower-left quadrant is identified by low density and low centrality, a theme located in that quadrant is marked by weak connections within itself and loose ties between that cluster and other clusters in the network. This means that themes associated with those keywords are becoming either stronger or weaker—unfortunately, we cannot affirm if the cluster in the lower-left quadrant is emerging or declining. Hence, by ignoring lower-left quadrant clusters, we are able to obtain a more accurate picture of the type of papers published by JEI, RRPE, and ROSE.

Finally, clusters in the lower-right quadrant indicate the traditional themes of the journals. Indeed, the following traditional themes in institutional economics are evident from the JEI clusters: (1)
“institutions,” “regulation,” and “evolutionary economics,” (2) “institutional economics,” “culture,” and “property rights,” and (3) “Veblen,” “inequality,” and “financial crisis.” This is also valid for the RRPE clusters, which highlight (1) “democracy,” “commons,” and “privatization,” (2) “neoliberalism,” “financialization,” and “Marx,” and (3) “inequality,” “gender,” and “crisis,” all of which reflect radical economics issues. ROSE has just one traditional analytical cluster, composed of “ethics” and “welfare,” which refer to issues in Social Economics. Compared to JEI and RRPE, the range of ROSE’s traditional themes is blatantly narrower. There may be a possible connection between one of JEI’s traditional theme clusters, “Veblen,” “inequality,” and “financial crisis,” and one of RRPE’s, “inequality,” “gender,” and “crisis.” Both share the keyword “inequality” and, to a lesser extent, “crisis.” As the RRPE cluster associates “inequality,” “gender,” and “crisis,” it probably does not have an explicit relation with financial matters. As previously discussed, “gender” is one of the JEI’s motor themes, as well as a keyword in the JEI’s specialized cluster, along with “income inequality.” We may therefore conclude that “gender” is associated with both JEI and RRPE clusters—a motor theme in the former and a traditional theme in the latter. Both JEI and RRPE present traditional theme clusters that relate to the keyword “inequality,” and “income inequality” is part of a JEI’s specialized theme cluster.

In summary, thematic maps based on keyword co-occurrence allow us to identify possible connections between the analytical themes in JEI and RRPE. These connections refer to themes related to development, sustainability, inequality, crisis, and gender, which can be understood as developmental issues. Nonetheless, it should be noted that these themes are approached from different theoretical perspectives and may differ in nature—being a motor theme to one perspective and a traditional theme to the other. Hence, a thematic convergence between the AFEE and the URPE seems possible. The ROSE thematic map, however, does not suggest any possible convergence with JEI or RRPE. A possible explanation is that ROSE is more thematically specialized, having just six clusters, while JEI has ten and RRPE has nine. ROSE thus seems to be a specialized journal, which leads us to conclude that there is little room for a possible thematic convergence between ASE and either AFEE or URPE.

4. Co-citation Networks

In this paper, we also analyze the references by creating co-citation networks of papers published in JEI, RRPE, and ROSE from 2010 to 2019 using bibliometrics. A co-citation network comprises studies frequently cited together by the most common pairs of cited studies, and constructs clusters of the most common references (Small 1973). Thus, the references included in a cluster in a co-citation network are the most relevant references on a particular topic in a journal. By examining the co-citation networks of JEI, RRPE, and ROSE, we are able to draw conclusions about their theoretical or analytical backgrounds and, thereby, identify possible issues of convergence.

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11 The keyword “commons” among the RRPE’s traditional themes has no relation with the Original Institutionalist John R. Commons, but with common resources.

12 The software and the package used to create the co-citation networks, R-Studio and bibliometrix, respectively (see Aria and Cuccurullo 2017), provide the reference by last name of the first author and year. For example, in the JEI network, Nelson R. R. 1982-2 refers to Nelson and Winter (1982). The “-2” in 1982-2 means that at least one other study published by Nelson in 1982 (1982-1) was cited in the JEI. Thus, the years of reference appear differently in the figures and in the text. In the JEI network, for instance, Veblen’s “Why Is Economics Not an Evolutionary Science?” is referred to as Veblen T. 1898-1, while in the text it appears as Veblen (1898a).
Source: Elaborated by the authors

The JEI co-citation network is shown in Figure 2. At the center of Figure 2, we find the seminal works of Veblen (1899) and Commons (1924), the founding fathers of Institutional Economics—*The Theory of the Leisure Class* and *Legal Foundations of Capitalism*, respectively. However, Veblen (1899) and Commons (1924) are located in different clusters. The first is in the same cluster as Veblen (1898a, 1898b, 1904, 1914, 1919, 1921, and 1923), Commons (1931), Galbraith (1967), Lawson (2003), and Brown (2008). It is clear from this cluster that many of JEI’s papers strongly rely on Veblenian writings as a theoretical background. Reliance on Veblen’s writings is the strongest feature of this cluster. The remaining co-cited references in the cluster are discussions or updates of Veblenian arguments. For example, Commons (1931) is a seminal paper on institutions and associated concepts, Galbraith (1967) provides post-war analysis of business, Lawson (2003) describes heterodox methods of analysis in economics, and Brown (2008) offers an Original Institutionalist perspective of the 2008 subprime mortgage crisis. Hence, we may consider this cluster to be the Veblenian cluster.

The cluster that includes Commons (1924) also comprises another work by John Commons (1934), two Ronald Coase papers (1937 and 1960), two books by Oliver Williamson (1975 and 1985), two books by the historian of economics Malcolm Rutherford (1994 and 2001), Demsetz (1967), Granovetter (1985), Knight (1921), and Nelson and Winter (1982). Commons was the first to move “transactions” to the forefront of his institutional analysis. Decades later, Williamson highlighted the fact that Coase presents a new institutional perspective. Williamson also centered his analysis on “transactions,” but from a liberal and non-reformist standpoint; his position is therefore very different from Commons. This cluster thus comprises Commons (1924 and 1934), studies from New Institutional Economics (Coase 1937 and 1960, and Williamson 1975 and 1985), Rutherford (1994), who distinguishes between Original and New Institutionalism, and Granovetter (1985), who provides a critique of Williamson’s Institutionalism. This cluster is therefore not fully Commonsian, but we may assume that it deals with issues on which Commons’s analysis is based, that is, this cluster deals with both references cited in JEI papers on Commonsian themes and criticisms of Williamson’s approach.

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13 Veblen T. 1898-1 and Veblen T. 1898-2 in Figure 2 refer to Veblen (1898a) and Veblen (1898b), respectively.
14 Nelson R. R. 1982-2 in Figure 2 refers to Nelson and Winter (1982).
15 Demsetz (1967) is a seminal mainstream paper about property rights, an economic issue deeply related to transactions—a Commonsian concern. Knight’s (1921) position in the cluster seems to be associated with the JEI papers that deal with comparisons between Original and New Institutional Economics and those that refer to Knight (1921)—such as Spithoven (2019) and Baudry and Chassagnon (2019). We believe that Nelson and Winter (1982) is justifiably a part of this cluster because of the JEI papers that (1) criticize their approach—such as Jo (2019) and, (2) offer an encompassing evolutionary approach embracing both the Nelson and Winter and the Commonsian perspectives—as in Elsner, Hocker, and Schwartd (2010). Furthermore,
In Figure 2, we find a reference to another New Institutionalist, Douglass North. The left cluster comprises North (1981, 1990, and 2005), Ostrom (1990 and 2005), Hodgson (2006), Sen (1999), Schumpeter (1934), Lawson (1997), Rutherford (2001), and Dugger (1990). These studies suggest that the main theme in this cluster is a criticism of the development perspective of New Institutional Economics, which is different from the transitional perspective of the previous cluster, which is why we have two separate clusters. This cluster includes William Dugger’s paper, which is a critique of the New Institutionalist approach to development from an Original Institutionalist perspective. In such a perspective, Douglass North’s and Elinor Ostrom’s studies are the targets of criticism. This cluster also includes studies on development, such as Schumpeter (1934) and Sen (1999). This suggests that the JEI papers use references comparing Schumpeter’s and Sen’s perspectives on Institutional Economics (Wunder 2007, Brown 2009 and Martins 2015).

Figure 2 also includes another cluster in the left. Five of the seven references within this cluster are clearly related to members of the Cactus Branch: Ayres (1944 and 1961), Bush (1987), Neale (1987), and Hayden (2006). The Cactus Branch was the most cohesive group of Original Institutionalists in the mid-20th century. Clarence Ayres was the charismatic leader of the group, which was based in the U.S. Southwest (see Sturgeon 1981 and Cavaleri and Almeida 2017). Elsner’s study (2012) is not a Cactus Branch study, but it discusses one of its themes: the ceremonial-instrumental dichotomy. Hodgson’s study (2004) is not a Cactus Branch study either, as it discusses the Original Institutionalist concept of habits, which refers not just to the Cactus Branch, but to Veblenian Institutionalism in general. Hence, papers that use these references are likely to be studies in line with Cactus Branch Institutionalism. Furthermore, the right cluster in Figure 2 comprises Keynes (1936), Polanyi (1944), Minsky (1986), Friedman (1952), Hodgson (1999), Smith (1776), Piketty (2014), and Mirowski (1989). The unifying theme running through these studies is that these are all critiques of the capitalist system and the way neoclassical economics understands and deals with it.

Figure 2 indicates that the JEI papers can be divided into five well-defined theme clusters: (1) Veblenian Institutionalism as a theoretical basis; (2) Commonsian themes, including the criticism of Williamsons’s institutional approach to transactions; (3) criticisms of the developmental perspective of New Institutional Economics; this cluster also includes papers on economic development; (4) Cactus Branch Institutionalism; and (5) criticisms of both capitalism and the neoclassical approach to it. Cluster (5) reinforces our previous finding based on the most cited sources: rejection or criticism of mainstream economics is often used to introduce heterodox perspectives.

As in the case of JEI, RRPE co-citation network also comprises five clusters (Figure 3).

Rutherford (2001) is excellent for his history of Institutional Economics from 1918 to 1947. Chapter 7, which deals with Wisconsin Institutionalism, is a very good source of information on Commons, his colleagues, and students.

16 To note, Dugger (1990) has been included here because he is a part of the references in this cluster, not because Dugger was published by JEI. Dugger (1990) is not part of our sample, which only deals with papers published from 2010 to 2019. However, the papers in our sample cite Dugger (1990), in addition to the other studies in the same cluster.

17 Hodgson (2006), Lawson (1997), and Rutherford (2001) are also part of the “development” cluster, but they comprise the supporting literature. Hodgson (2006) discusses concepts of organization and institutions as defined by North, including e-mails exchanged between Hodgson and North; Hodgson (2006) provides an institutional conceptualization according to New Institutional Economics. Rutherford (2001) seems to be in line with Hodgson (2006); Rutherford’s paper deals with the history of Original Institutionalsism and its difference from the new perspective. Lawson (1997) also deals with the history of economic ideas, but his description is more encompassing than Rutherford’s (2001), as Lawson (1997) is more about the evolution of economics in a general sense.

18 Cactus Branchers were in close and continuous contact. The Southwestern Social Science Association and the Southwestern Social Science Quarterly acted as forums for the exchange and dissemination of their ideas. Later, several Cactus Branchers were central to the foundation of the AFEE and the JEI (see Sturgeon 1981, and Cavaleri and Almeida 2017).
At the center of Figure 3, Marx (1867) stands out, next to Marx (1857), both of Marx’s seminal works, Grundrisse and Das Kapital\(^{19}\). Other references present in this cluster are based, almost exclusively, either on the Marxist approach or on comments on Marx’s writings, for example, Rosdolsky (1977), who analyzes the theoretical and methodological aspects of Marx’s Grundrisse. Harvey (1982, 2005, 2014), Weeks (1981), and Amin (1976) analyze the nature, problems, failures, and contradictions of capitalism. Sraffa (1960) criticizes marginalism and Kautsky (1899) relates agriculture to capital, based on Marxist theory. Quick (2004) and Munk (2013) discuss the term "precariousness" and domestic labor, respectively, and Jossa (2005) defends the cooperative as a new production mode. Vanek (1970) and Arrighi (1994) deal with labor management and capitalism in the 20th century and are depicted by RRPE papers as close to Marxist theory\(^{20}\). We may thus assume that this cluster is composed of papers based on Marxist theory. Keynes (1936) is also a reference in the cluster, but no straightforward conclusion can be drawn from this fact, as there are papers that approach Keynesian economics critically, and this could suggest a convergence between the Post Keynesian and Marxist perspectives.

At the center of Figure 3, under Marx (1867), we find Harvey (2005), which is the main reference of another cluster. We believe that this cluster is based on the analysis of capitalism from a Marxist perspective. Gill (1995), Bowles, Edward and Roosevelt (2005), Harvey (2005; 2010), Gibson-Graham (2006), Glyn (2006), Kotz (2009), Duménil & Lévy (2011), and McNally (2011) analyze the history, failures, and crisis of the capitalist system. There is a special focus on the study of neoliberalism after the 2008 sub-prime mortgage crisis, offering alternatives to global capitalism. Chibber (2003) and Fine (2010) provide explanations for the failures of the developmental state in post-colonial India and criticize the theory of social capital, respectively. These analyses also rely on a Marxist perspective. Kalecki’s (1954) Marxist view of effective demand, dynamics, and structure of capitalism is also part of this cluster\(^{21}\).

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\(^{19}\) In order to avoid underestimating the role of Marx’s Das Kapital the network—a book that has multiple volumes published over a number of years—we categorized them all as Marx (1867). Accordingly, Marx (1867) represents all the references to Marx’s magnum opus, regardless of the specific volume referenced.  


\(^{21}\) It is possible to assign Lee’s (2009) history of heterodox economics, which encompasses Marxism, to this cluster. Our hypothesis is that Lee (2009) is part of the cluster because his history of dissenting approaches is a great supporting reference for Marxist analyses of capitalism based on history. Our point is that Lee’s (2009) inclusion in the cluster means that RRPE papers included in this cluster deal with the history of capitalism against the history of Marxist ideas.
In addition, at the center of Figure 3, under Harvey (2005), we find Polanyi (1944), who is part of yet another cluster within the RRPE co-citation network. We believe that there are two groups of references in this cluster. One group comprises criticisms of the capitalist system, studies on the nature of economic life, and a critical perspective on the way neoclassical economics understands and deals with these issues. This group is composed of Braverman (1974), Davis (2006), Polanyi (1944), Sahlins (1972), Smith (1776), and Veblen (1899). It is important to highlight that these references are not only Marxist, but heterodox; this suggests a convergence of heterodox approaches in the criticism of capitalism, as well as a critical perspective on the approach of neoclassical economics. The other group is composed of Hardin (1968), Ostrom (1990), Jackson (2009), and Harvey (2012), and addresses issues related to ecology and the tragedy of the commons. The solutions suggested by Hardin (1968) for common goods, such as authoritarian population control and privatization, and Ostrom’s (1990) approach based on New Institutional Economics are criticized by Harvey’s (2012) Marxist perspective. Jackson’s (2009) book, while not based on a Marxist perspective, makes a suggestion, similar to Harvey’s (2012), that growth and profit-seeking lead to degradation of work and the environment. We thus believe that this group is based on Marxist criticisms to both Hardin’s and Ostrom’s approaches.

There are two other clusters in the RRPE co-citation network. One is composed of Gordon, Edwards, and Reich (1982), Laclau and Mouffe (1985), Duménil & Lévy (1993; 2004), Harvey (2006), and Brenner (2006). These studies address, in general, the development and decline of both labor market and capitalist production, especially in the United States, emphasizing social struggle, the fall in the profit rate, and criticisms of neoliberalism. We therefore believe this cluster to be composed of issues associated with Marxism. Finally, the last cluster comprises historical studies on the developmental process based on different perspectives—Gramsci’s (1971) and Tilly’s (1992) Marxism; critical perspectives on neoclassical economics, including Reinert (2007), Ferguson & Gupta’s (2002) approach to the influence of the state in societies from an anthropological perspective and the New Institutional Economics of Acemoglu & Robinson (2012). We have assumed Acemoglu & Robinson (2012) to be a part of this cluster because it is critically referenced by RRPE papers.

In summary, Figure 3 indicates that RRPE papers are based on five co-citation clusters, characterized by: (1) a Marxist theoretical background and minor references to criticism of both the neoclassical approach and Keynes’s “General Theory”; (2) an analysis of capitalism from a Marxist perspective; (3) criticisms of the capitalist system, neoclassical economics, tragedy of the commons, and New Institutional Economics; (4) miscellaneous issues associated with Marxism, and; (5) historical studies on the developmental process.

There are thus obvious similarities between JEI’s and RRPE’s co-citation networks. Both are composed of clusters associated with the theoretical backgrounds of, respectively, institutional economics and radical economics—Veblenian, Commonsian, and Cactus Branch in the case of JEI, and Marxism in the case of RRPE. Both co-citation networks comprise clusters based on criticisms of (1) capitalism, (2) the neoclassical approach to capitalism, and (3) New Institutional Economics. These findings corroborate our previous findings based on the most cited sources that criticism of mainstream economics may be viewed as a convergent issue among heterodox perspectives. The same is true in relation to criticisms of both capitalism and New Institutional Economics, as the heterodox approaches promoted by the AFEE and the URPE demonstrate. Another common theme identifiable in both the JEI and RRPE co-citation networks is economic development. This reinforces the results we reached by means of thematic maps, in which we identified “development” as an important issue and a possible point of thematic convergence between JEI and RRPE papers. Thus, our analysis of the co-citation networks of the papers published in these journals suggests possible paths to convergence between the AFEE and the URPE, a convergence likely to be based

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22 Papers published in RRPE, such as Duzgun (2017), criticize Acemoglu and Robinson’s (2012) perspective that capitalist development is the result of strong institutions, specifically property rights. Similarly, Lopez-Castellano, Manzanera-Ruiz, and Lizárraga (2019) criticizes the mainstream perspective of institutionalist analysis of development with a focus on neoliberalism and institutions, without considering the political environment of individual countries. Fernández, Ebenau, and Bazza (2017) critically analyzes how capitalist diversity between countries is conceived in mainstream institutionalist literature, including the study by Acemoglu and Robinson (2012). Artner (2018) criticizes the study of Acemoglu and Robinson (2012) for supporting the relationship between democracy and liberal capitalism. Moreover, Vernengo and Fields (2012) cites Acemoglu and Robinson (2012) to indicate the New Institutional Economics perspective on the causes of the rise of Western Europe.
on criticism of both the capitalist system and certain theoretical approaches, as well as on a thematic overlap regarding economic development. However, we were not able to find any convergence whatsoever in terms of theoretical background.

**Figure 4 – Co-citation network of the Review of Social Economy**

Figure 4 shows the *ROSE* co-citation network, comprising three main clusters. The cluster at the top of Figure 4 is composed of 19 references, which we divided into three smaller groups: (1) moral issues, (2) limits and criticism of economics, and (3) identity and groups. The “moral issues” group is composed of studies on freedom, equality, justice, and exploitation, such as, for example, Griffin (1987), Sample (2003) and the behavioral economics approach of Fehr & Schmidt (1999), alternative approaches to utilitarian well-being like Sen’s (1992, 1999 and 2002), Nussbaum’s (2000) capabilities approach, Rawls’s (1977) deontological contractualism, and Nozick’s (1974) libertarianism. The second group includes studies by Sen (1987), McCloskey (2006), and DeMartino (2011); this group defends the introduction of ethics and history into economics, as well as ethics as part of the economics profession. Other studies from this group include Hirschman (1970) and Lawson (1997), who criticize the theoretical construction of economics and defend, respectively, in representations of the real world, assumptions more compatible with reality and the inclusion of social reality. Davis (2006), who is also part of this group, investigates neoclassical economics as a single and newly dominant research program, encompassing historical and institutional perspectives in its approach. Mirowski’s (2013) criticism of the thought and construction of neoliberal ideas is also part of this group. The third group comprises Akerlof and Kranton (2002), Davis (2003), and Williamson (1975). Akerlof and Kranton adopt a mainstream approach, whereas Davis (2003) criticizes it. Williamson (1975) approaches New Institutional Economics critically due to his focus on efficiency.

The center cluster is composed of studies that suggest convergence of heterodox approaches as a theme. This cluster contains studies on Keynesian perspectives—Keynes (1936) and Goshal (2005); social economics—Polanyi (1944) and Etzioni (1988); and radical approaches (Marx 1867 and Piketty 2014). The study by Ostrom (1990) is also part of this cluster; usually, it is briefly quoted to introduce the New Institutional Economics perspective. Other references are mixed in terms of perspectives. Esping-Andersen (1990) discusses the state of well-being from a Keynesian and social economics perspective. The

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23 For example, Clement and Meunie (2010) and Waters-Lynch and Potts (2017) briefly cite Ostrom (1990) to introduce discussions on economic development and governance of co-working spaces, respectively. Lutz and Tadesse (2017) derive from Ostrom’s (1990) study some conditions under which the collective actions of cooperatives are successful in the distribution of natural resources. Metzlar (2017), when analyzing the strategic position of small producers, use Ostrom (1990) to reinforce his results, stating that the members of cooperatives do not share the same objectives. Finally, Fremstad (2016) argues that Ostrom’s (1990) neoclassical study disregards the existence of many shareable goods.
history of economic ideas is discussed in Schumpeter (1954) and the well-being of workers in Golden & Wiens-Tuers (2008). Smith’s (1776) Wealth of Nations and Galbraith’s (1958) Affluent Society are also part of this cluster.

The bottom cluster in Figure 4 comprises papers on social economics, including some on critiques of traditional approaches. Coleman (1988 and 1990), Granovetter (1985), and Nooteboom (2007) define and analyze the main concepts of social economics, such as networks, embeddedness, social capital, institutions, and trust. Other studies seek to understand how social relations matter in the economy through empirical works. Putman (1993 and 2000) and Fukuyama (1995) analyze how social and cultural relations and institutions are important in explaining the differences in development and economic prosperity between regions and countries. Van Staveren and Knorringa (2007) and Lutz (2012) discuss how social relations interact in companies and value chains. Finally, Wilson and Musick (1997) positively associate volunteer work with human, social, and cultural capital. This cluster also includes mainstream studies, such as Knight (1927), Stiglitz & Weiss (1981), and North’s (1990) New Institutional Economics. The general approach of these papers is critical24.

To summarize, the ROSE co-citation network can be divided into three main groups: moral issues, limits of and dissatisfaction with economics, and identity and groups. The remaining two clusters concern convergence of heterodox approaches and social economics; the latter includes criticism of traditional approaches—mainstream and New Institutional Economics. There are similarities between ROSE’s co-citation network and both JET’s and RRPE’s co-citation networks. Although not a dominant issue, ROSE also includes criticism of New Institutional Economics. This may not be clear because such criticism is scattered throughout the three main clusters. This is also true of criticism of the neoclassical approach, which is part of a main cluster and, also, features in a minor cluster (see footnote 24). Thus, the ROSE co-citation network also reinforces the concept of heterodox convergence through a rejection or criticism of both the neoclassical approach and New Institutional Economics. This is valid for both JET’s and RRPE’s co-citation networks as well. In terms of theoretical background, the ROSE co-citation network also highlights a convergence among the heterodox approaches. Therefore, our findings about the ROSE co-citation network suggest that the ASE could be open to convergence with the AFEE and the URPE in what regards criticism and theoretical background.

5. Final Remarks

This paper offers an empirical study on the possibility of convergence among three of the most important heterodox associations: the AFEE, the URPE, and the ASE. We focused on these associations because their annual meetings take place within the ASSA, under the auspices of the AEA. Due to dissatisfaction with the AEA’s conduction of the ASSA meetings, the AFEE, the URPE, and the ASE have combined forces as a “survival strategy,” which has led to joint sessions and pre- or post-ASSA conference meetings—the ICAPE conference. Given that papers published by an association’s journal tend to reflect the kind of economics its membership stands for, our paper offers an analysis of the theoretical and thematic perspectives of the three associations on which their possible convergence could be based. We analyzed the journal of each association, that is, JEI, RRPE, and ROSE in order to explore the possibility of a convergent thematic or analytical background that might justify a collective survival strategy. To ensure representativeness, our sample included studies from 2010 to 2019.

We used three different metrics: most cited sources, thematic maps, and co-citation networks. The first throws light on some of the common features of the papers published by JEI, RRPE, and ROSE. We observed that the most cited journal in each journal was that journal itself and that most references were to papers published in mainstream journals. In addition, most of the papers published in the three journals deal directly with a rejection or criticism of mainstream economics and then introduce their heterodox

24 The ROSE co-citation network comprises three main clusters and two minor clusters. One minor cluster comprises four studies: Defourny & Nyssens (2010), Dey & Steyaert (2010), Yunus (2010) and Hjorth (2013). Social entrepreneurship is the main theme of this cluster. These studies aim at comparing the different concepts and narratives of social entrepreneurship, highlighting the economic, social, political, and cultural aspects of enterprises. The other minor cluster consists of only two articles, Becker (1968) and Necker (2014), and addresses issues related to unethical or illegal behavior. The article by Becker (1968) refers to economists’ scientific misbehavior (data fabrication or plagiarism) due to the pressure to publish. The argument is that the economic theory of crime, developed by Becker (1968), predicts that competition increases the benefits of cheating.
perspectives, that is, we found convergence based on positive alternatives as advocated by Lee. This type of convergence (rejection and criticism of mainstream in order to offer an alternative) was also reinforced by our analysis of co-citation networks.

Co-citation networks also suggest that rejection and criticism of New Institutional Economics could be a possible point of convergence. Both the JEI and the RRPE co-citation networks also highlight the pervasiveness of the criticism of capitalism as a possible convergent issue. According to the thematic maps and co-citation networks, “development” is an important issue for both JEI and RRPE, which may indicate a possible point of thematic convergence. However, the thematic maps show that each journal approaches “development” according to its preferred analytical background—Original Institutionalism in the case of JEI, and radical economics, in case of RRPE. Other findings of this paper are as follows: (1) the most cited sources highlight that there is cross-fertilization in the JEI-RRPE, and JEI-ROSE dyads, but not in the RRPE-ROSE dyad; (2) the thematic maps indicate that there is no possible thematic convergence between ROSE and either JEI or RRPE; and (3) the co-citation networks suggest the existence of an openness of ROSE to convergence regarding heterodox approaches in terms of theoretical backgrounds; however, this aspect has not been fully explored here.

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